Fig. 1

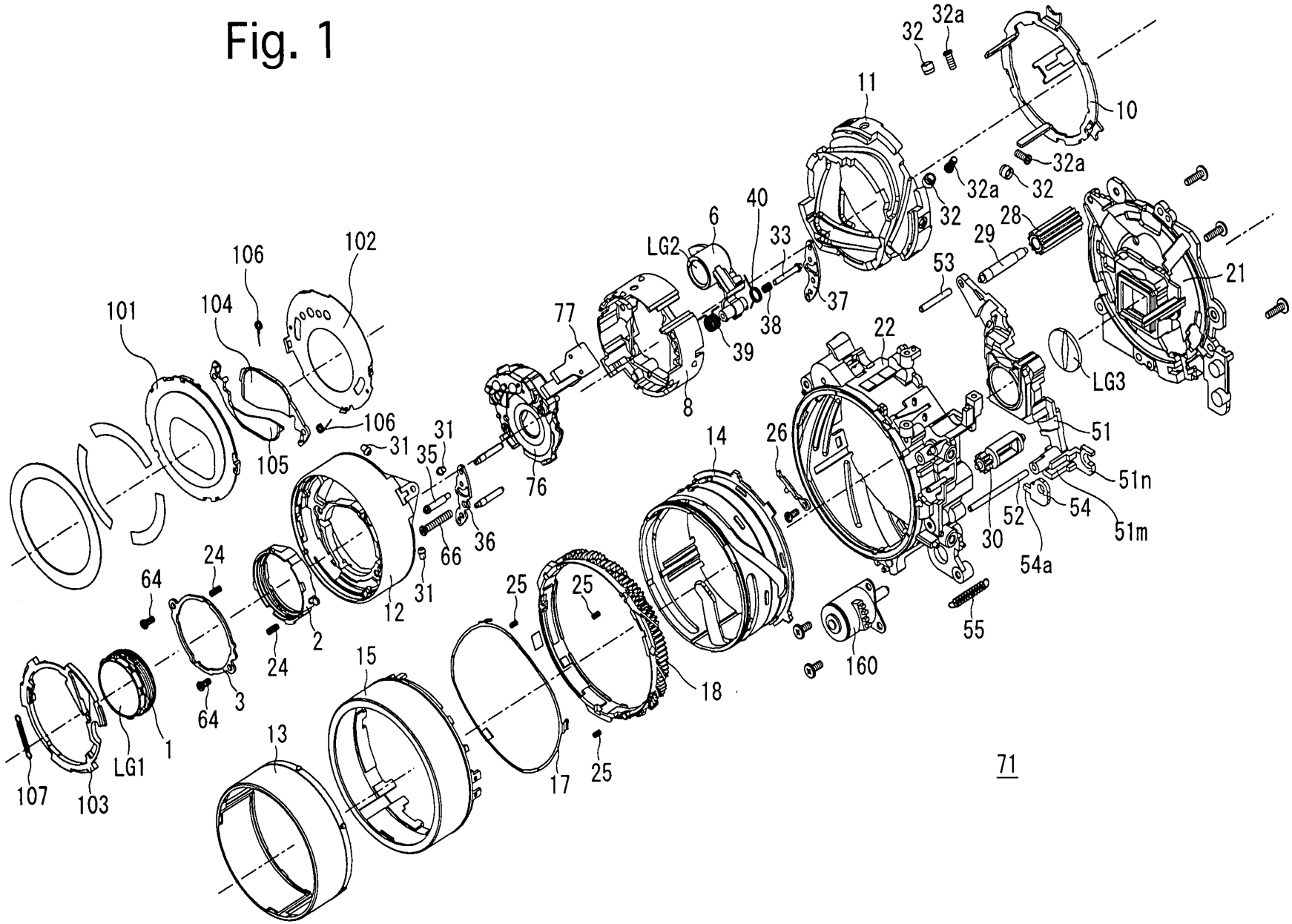

32
32a
11
10
32a
32a
32
32
40
6
LG2
33
28
29
53
21
37
38
39
77
22
LG3
8
106
102
101
104
106
105
31
31
35
14
26
51
51n
76
36
66
31
12
30
52
54
51m
54a
24
64
25
25
2
24
55
64
3
15
160
18
1
LG1
13
17
25
107
103
71

Fig . 2

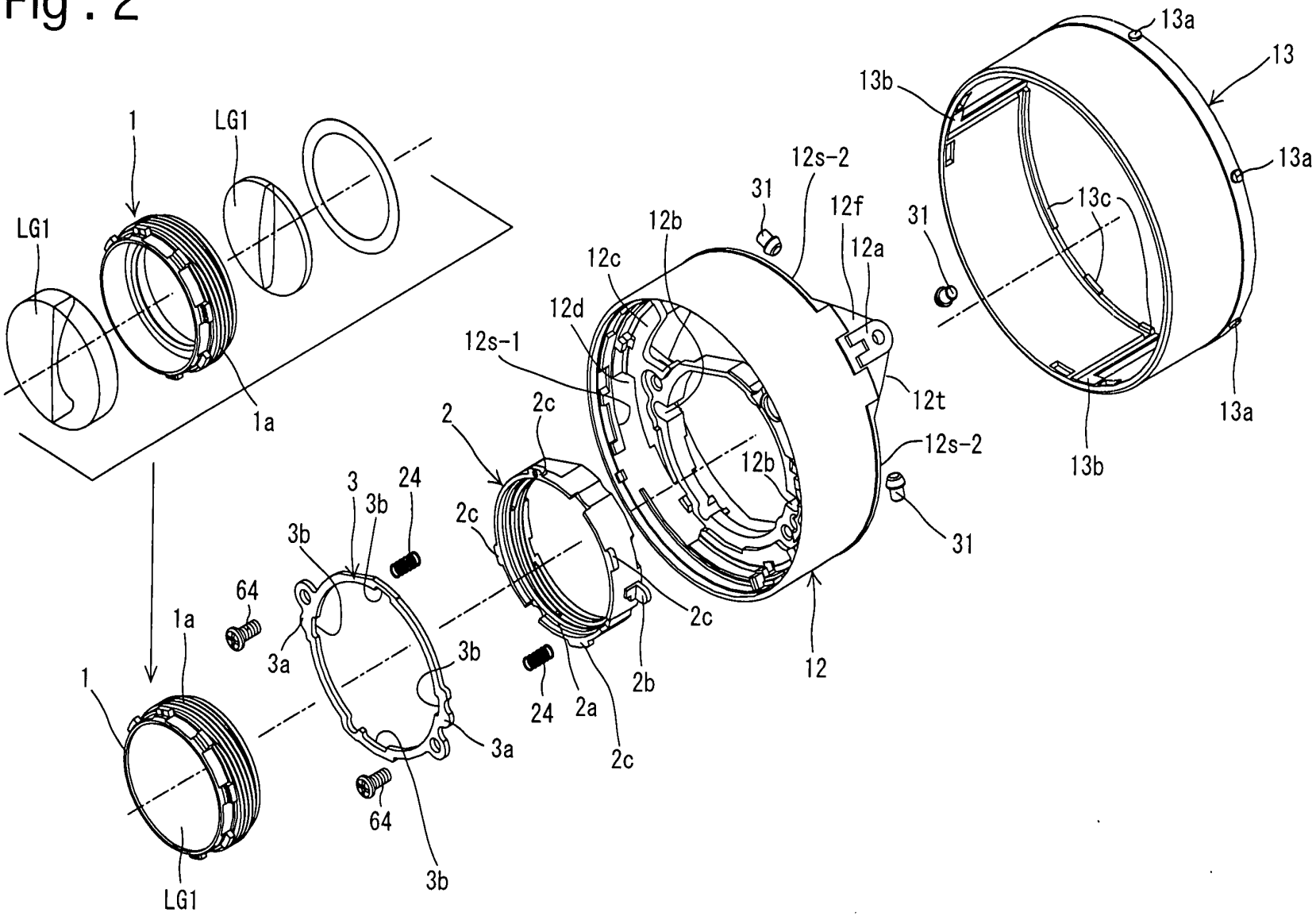
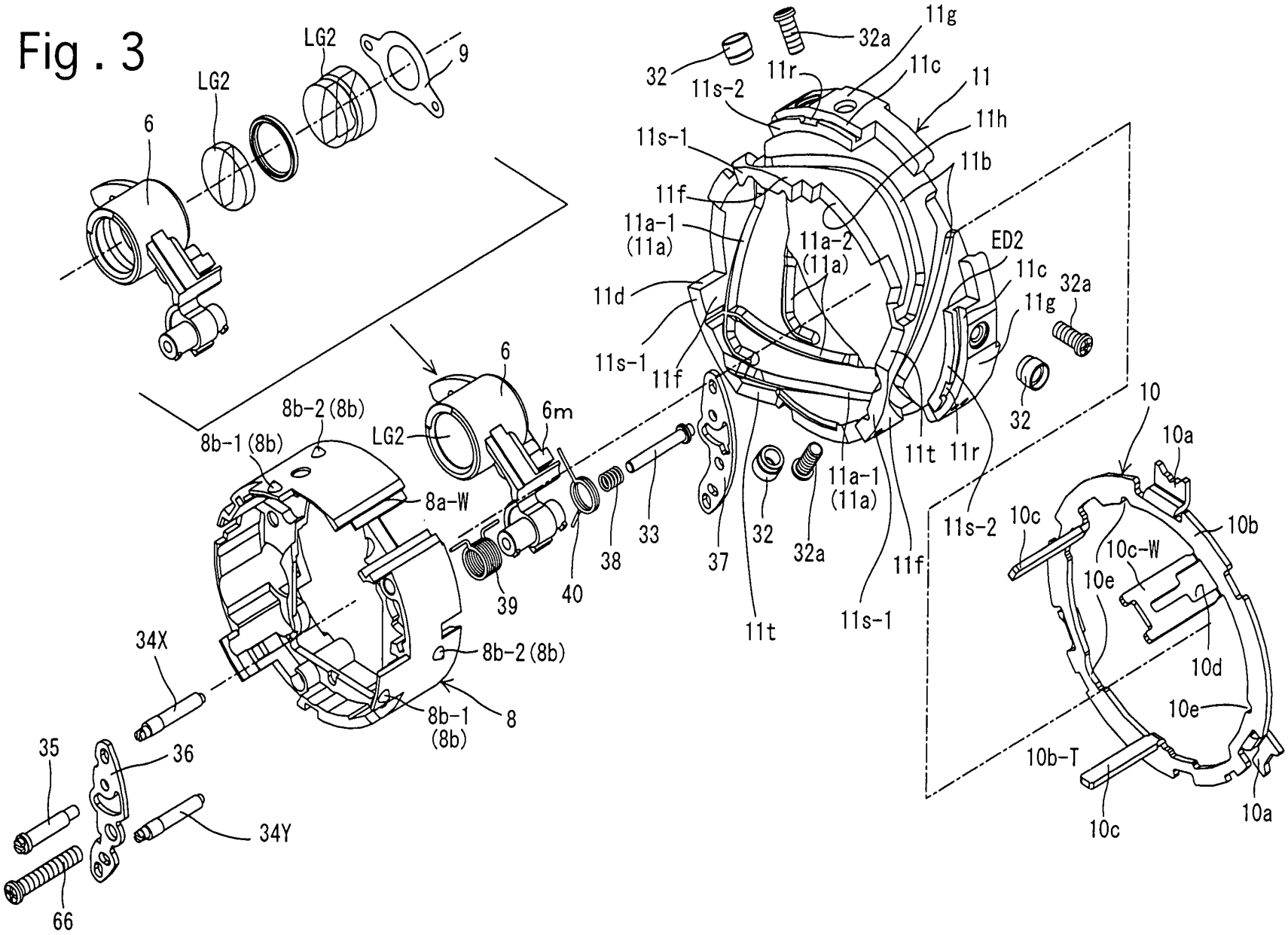

1
LG1
LG1
1a
13a
13
13b
13a
12s-2
31
12f
12b
12c
12a
31
13c
12d
12s-1
12t
2
2c
12b
12s-2
13b
13a
31
3
24
3b
3b
2c
64
1a
3a
3b
1
24
2a
2b
12
2c
3a
64
3b
LG1

Fig . 3


LG2
LG2
9
6
32
11s-2
11r
32a
11g
11c
11
11h
11b
11s-1
11f
11a-1
(11a)
11a-2
(11a)
ED2
11d
11s-1
11f
6
6m
LG2
8b-2 (8b)
8b-1 (8b)
8a-W
11c
32a
11g
32
11t
11r
11a-1
(11a)
11s-2
11f
11t
11s-1
10
10a
10c
10b
10c-W
10e
10d
10e
10b-T
10c
10a
33
38
37
32
32a
39
40
34X
8b-2 (8b)
8b-1
(8b)
8
35
36
34Y
66

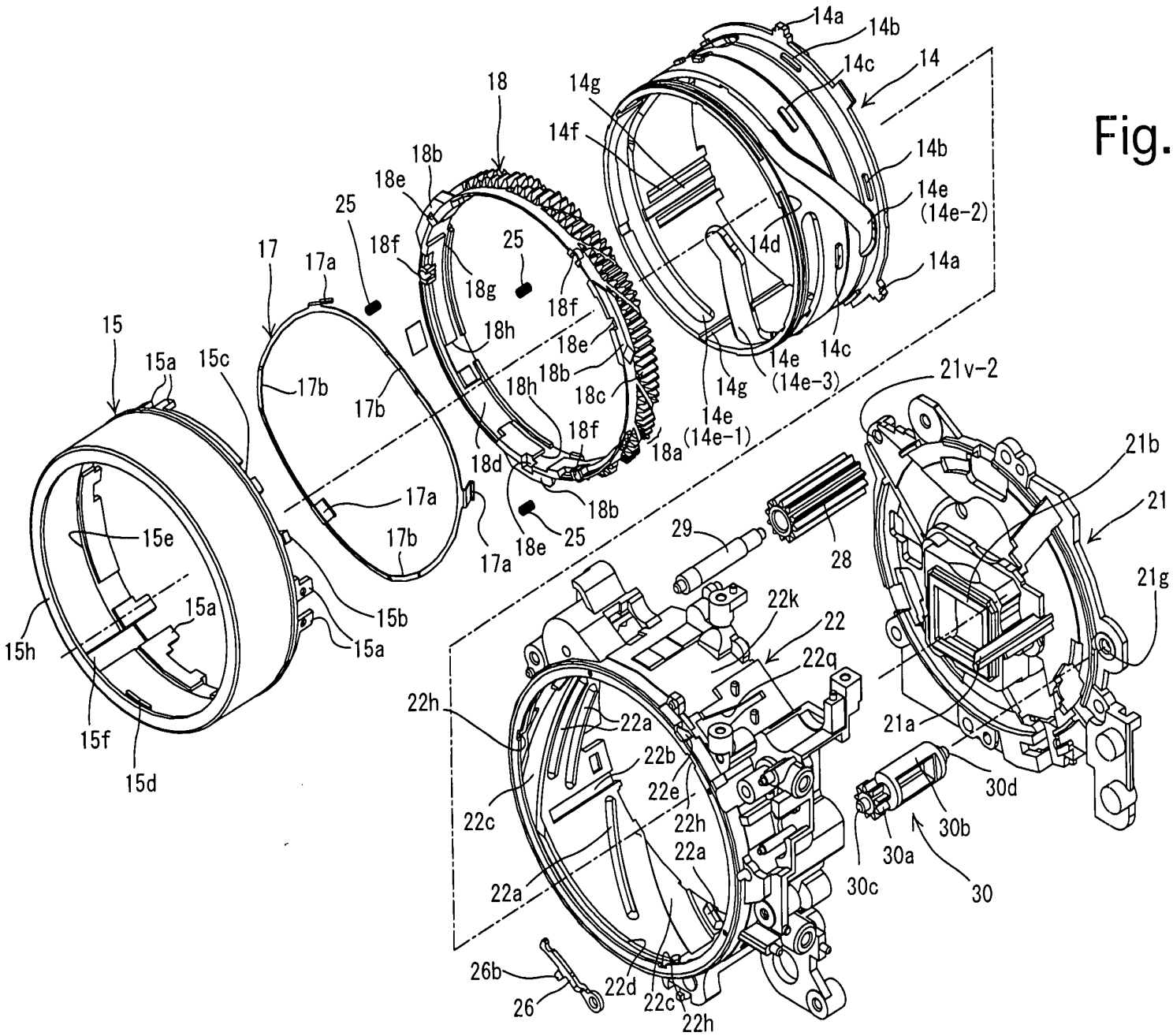

14a
14b
14c
14
14g
14f
18
18b
18e
25
18f
17
17a
18g
25
14b
14e
(14e-2)
14d
14a
14c
14e
(14e-3)
14g
14e
(14e-1)
18a
18f
18e
18b
18h
18c
18h
18f
18d
18b
25
18e
17a
17b
17a
17b
17a
15
15a
15c
17b
15e
15a
15h
15b
15a
15f
15d
21v-2
21b
21
21g
29
28
22k
22
22q
22h
22a
22b
22e
22h
22a
22c
22a
21a
30d
30b
30a
30c
30
26b
26
22d
22c
22h

Fig. 4

Fig. 5

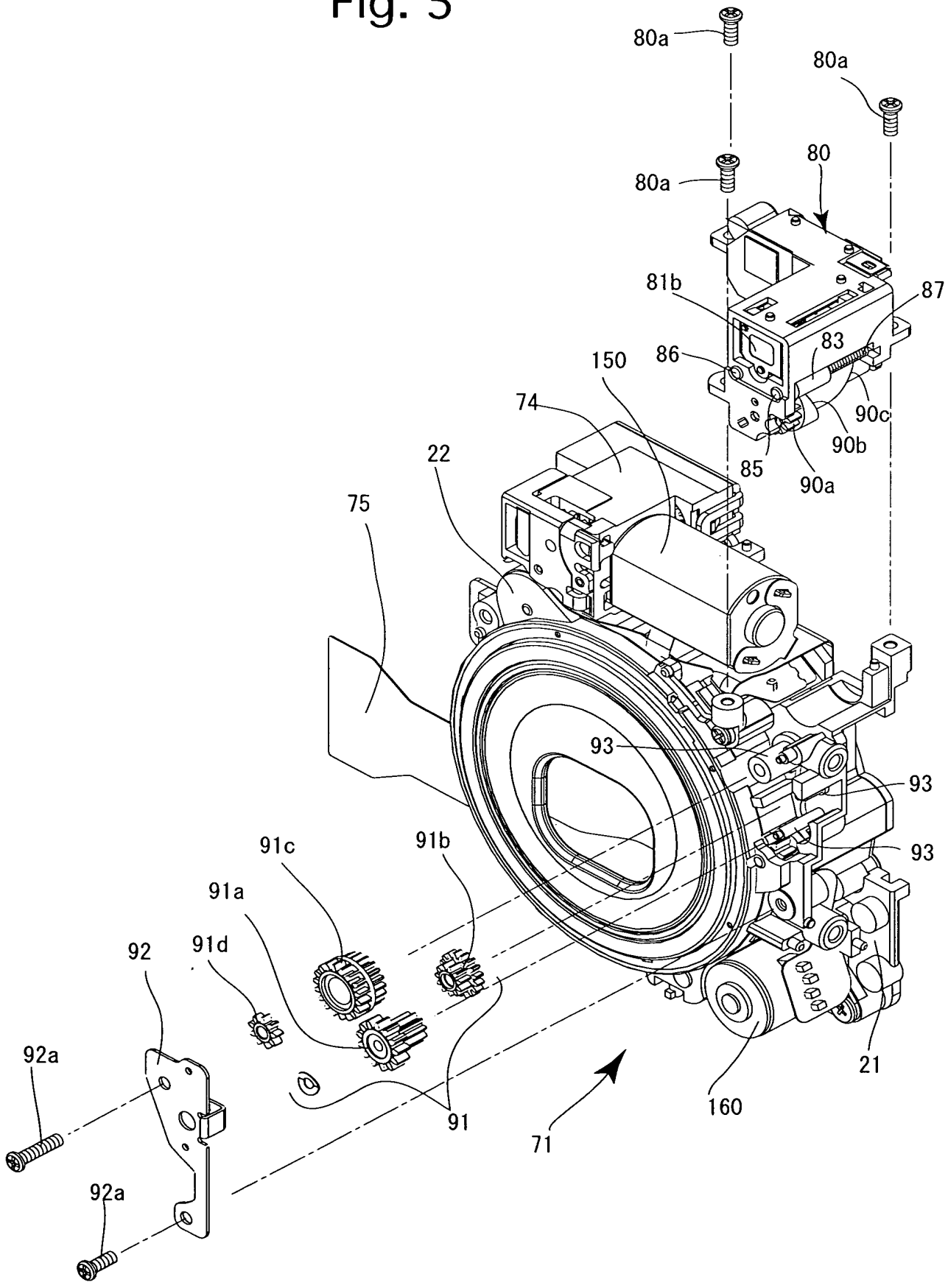

80a
80a
80a
80
81b
87
83
86
150
74
90c
90b
85
90a
22
75
93
93
93
91c
91b
91a
91d
92
92a
92a
91
71
160
21

Fig. 6

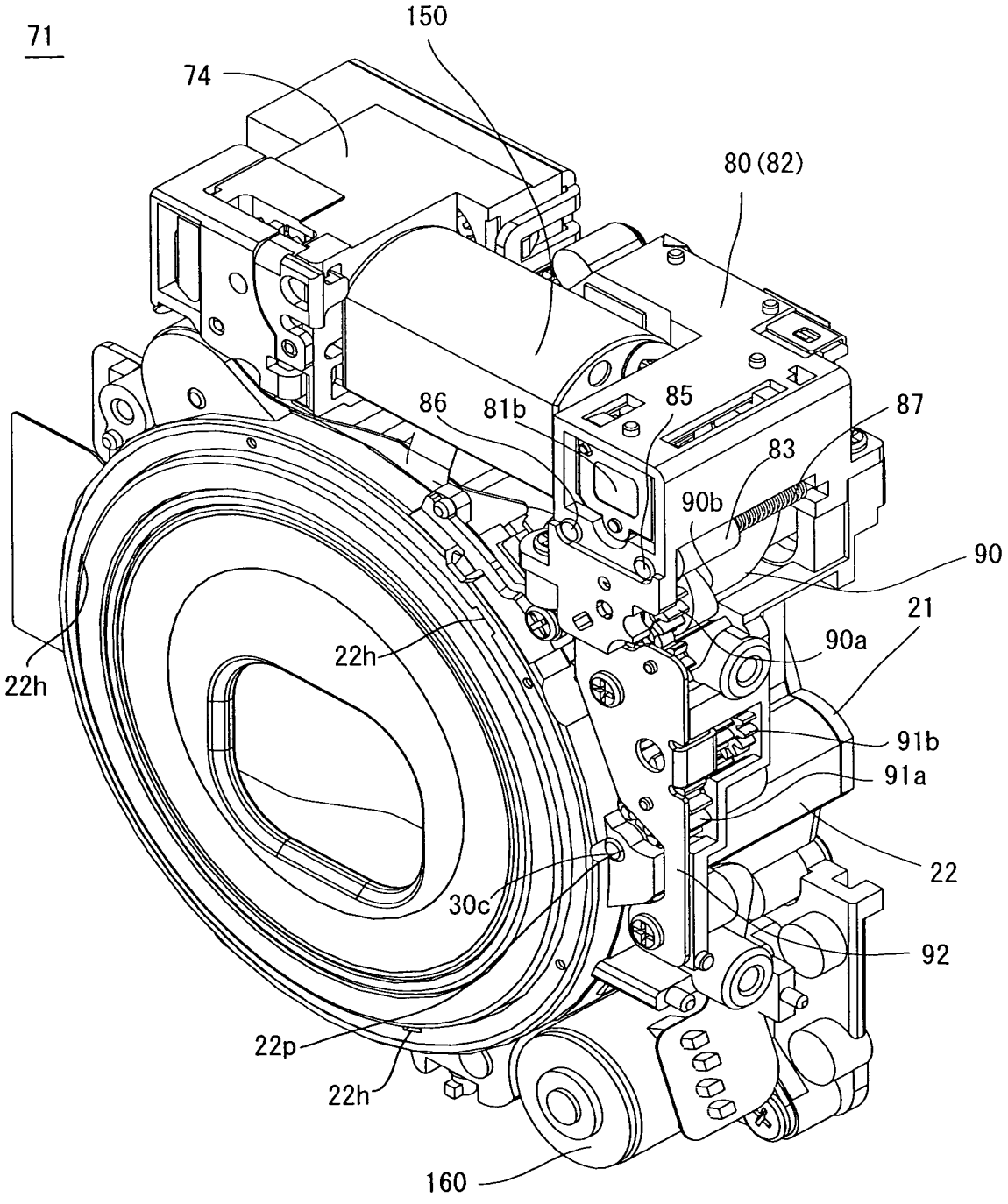

71
150
74
80 (82)
86
81b
85
87
83
90b
90
21
90a
22h
22h
91b
91a
22
30c
92
22p
22h
160

Fig. 7

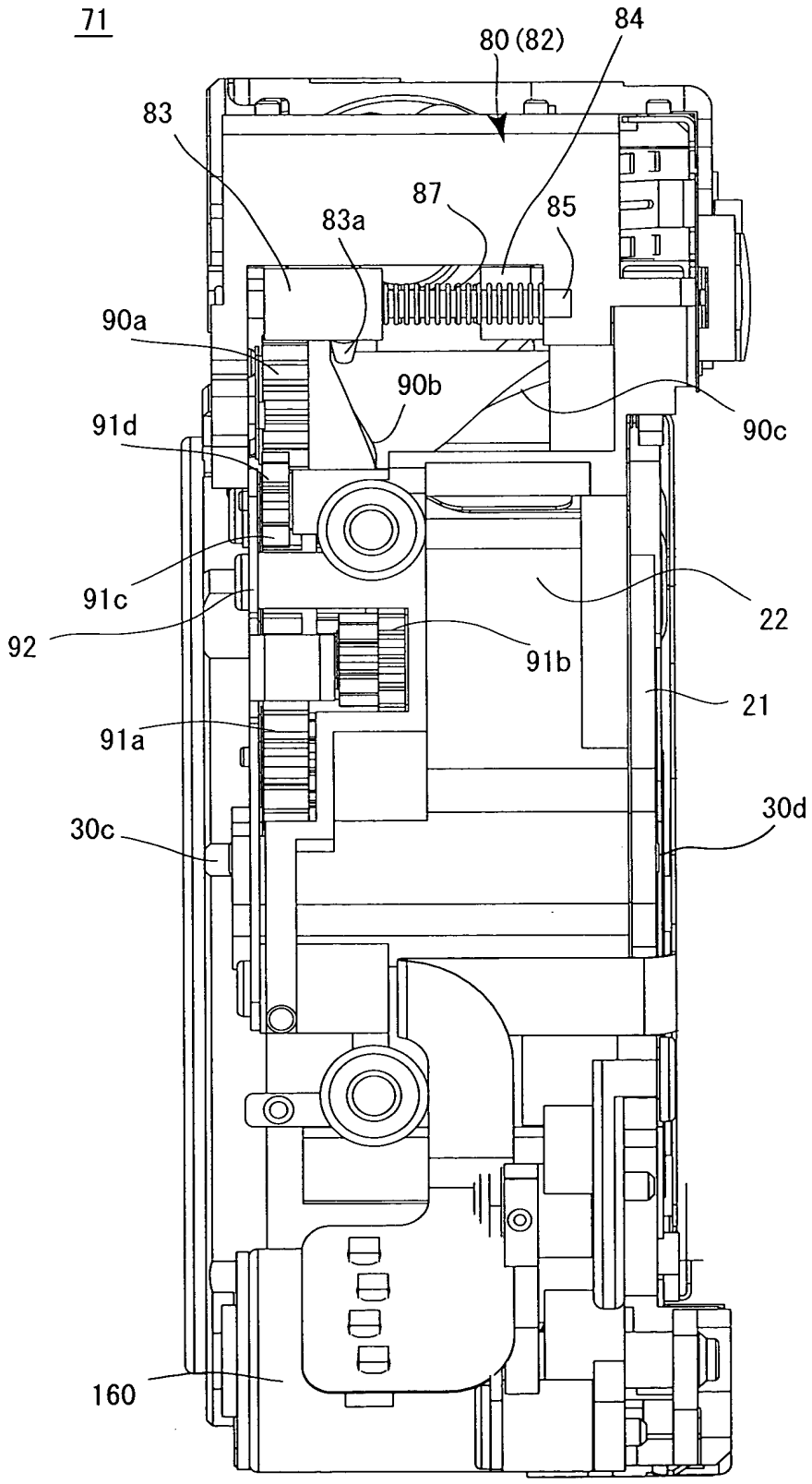

71
80 (82)
84
83
87
85
83a
90a
90b
90c
91d
91c
92
22
91b
21
91a
30d
30c
160

Fig. 8

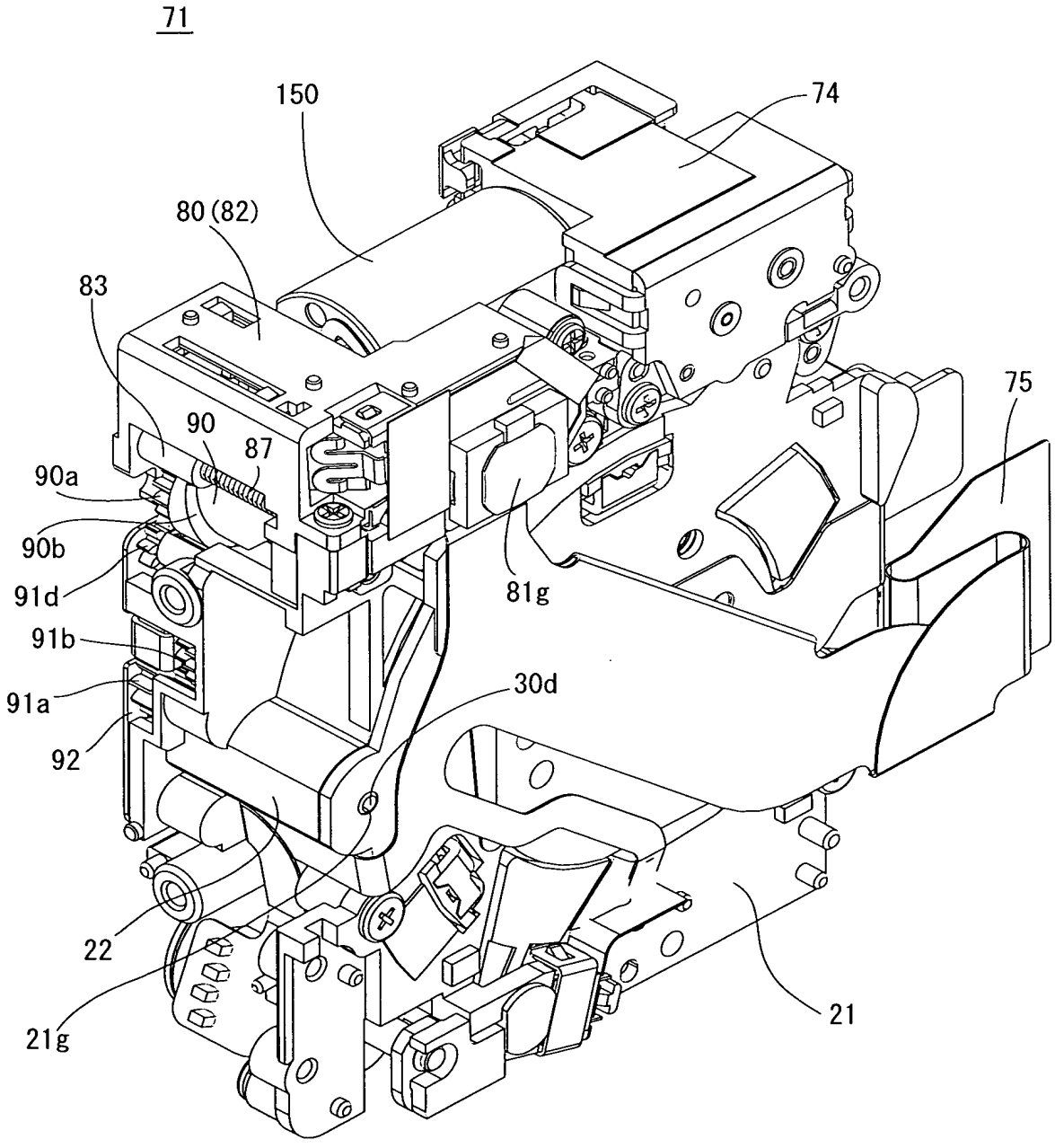


Fig. 9

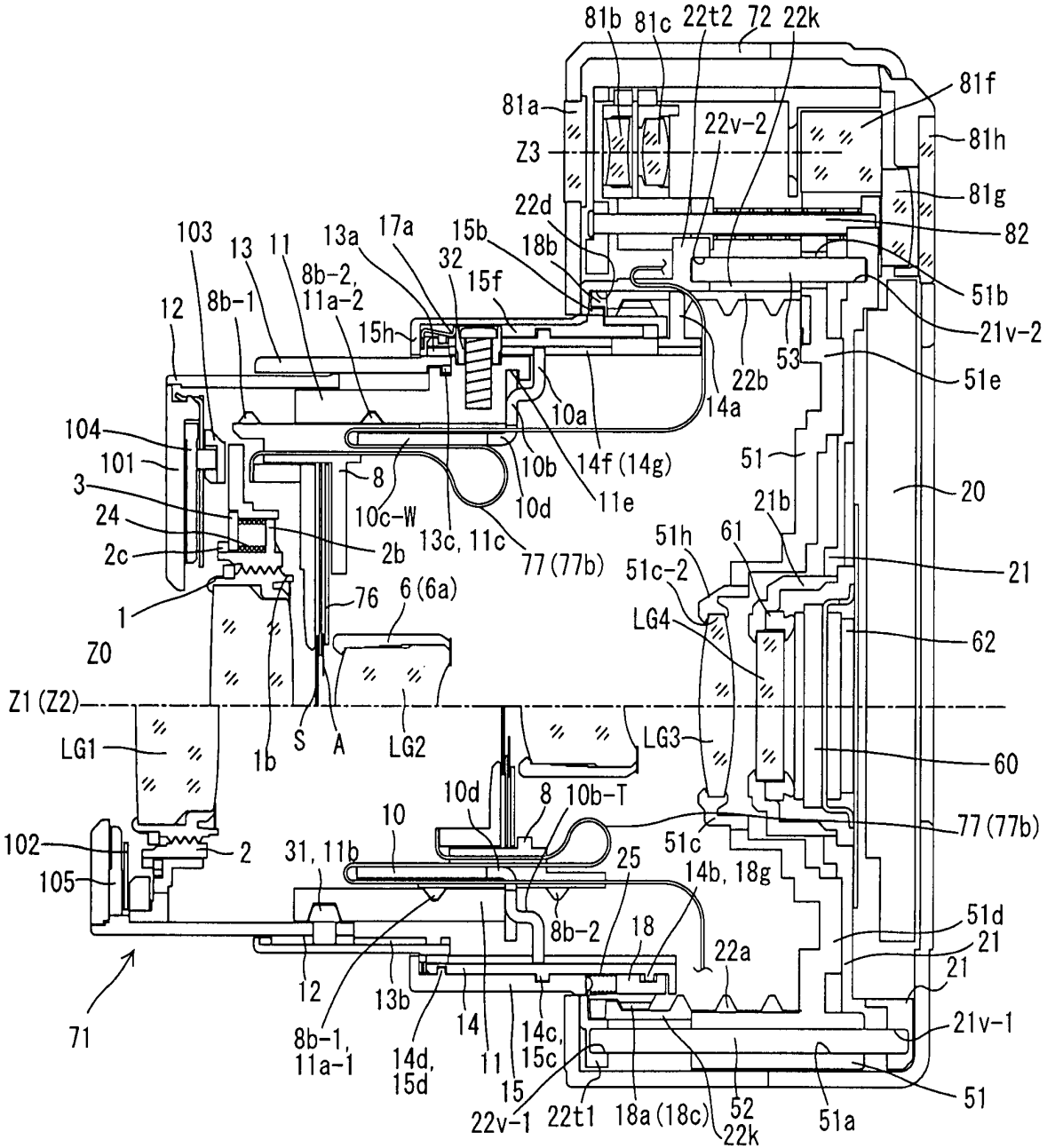

70
81b
81c
22t2
72
22k
81f
81a
22v-2
81h
Z3
81g
22d
82
18b
15b
17a
13a
32
15f
103
13
11
8b-2,
11a-2
8b-1
12
15h
51b
21v-2
22b
53
51e
14a
10a
104
101
3
24
2c
1
Z0
8
10b
14f (14g)
10d
11e
10c-W
13c, 11c
77 (77b)
2b
76
6 (6a)
51
20
21b
51h
61
51c-2
21
LG4
62
Z1 (Z2)
LG1
1b
S
A
LG2
LG3
60
10d
8
10b-T
77 (77b)
10
102
2
31, 11b
51c
105
25
14b, 18g
8b-2
18
51d
21
22a
21
12
13b
14
14c,
15c
21v-1
71
8b-1,
11a-1
14d,
15d
11
15
22v-1
22t1
18a (18c)
52
22k
51a
51

Fig. 10

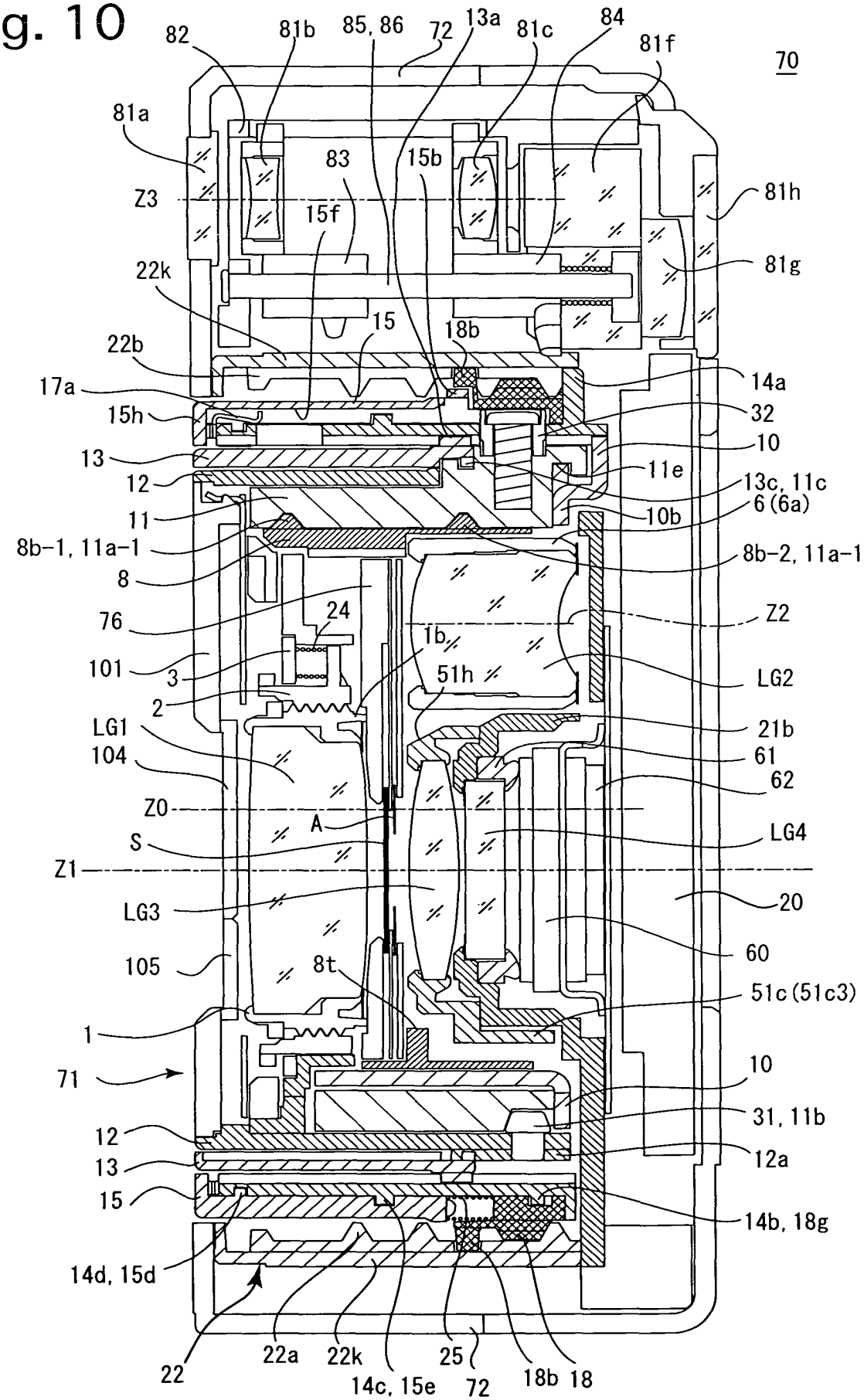

82
81b
85, 86
72
13a
81c
84
81f
70
81a
83
15b
Z3
15f
81h
81g
22k
15
18b
22b
14a
17a
32
15h
10
13
11e
12
13c, 11c
11
6 (6a)
10b
8b-1, 11a-1
8b-2, 11a-1
8
76
24
Z2
1b
101
3
51h
LG2
2
LG1
21b
104
61
62
Z0
A
LG4
S
Z1
20
LG3
60
105
8t
51c (51c3)
1
71
10
31, 11b
12
12a
13
15
14b, 18g
14d, 15d
22
22a
22k
25
18b 18
14c, 15e
72

Fig. 11

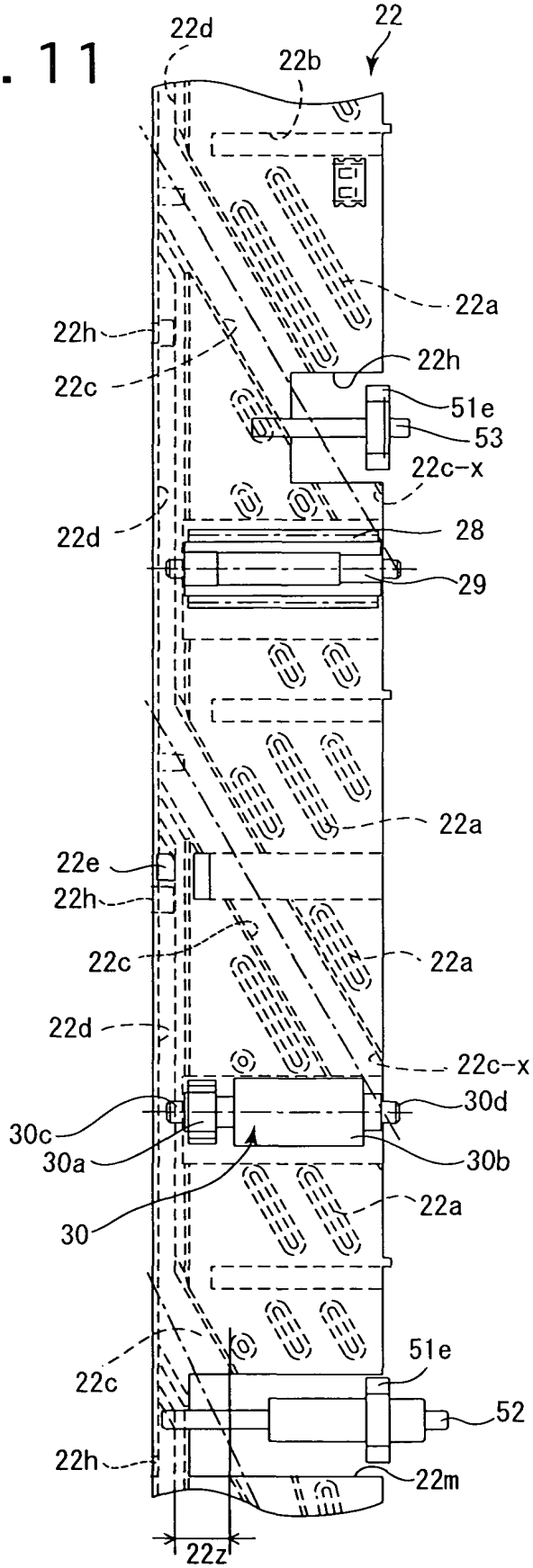

22d
22
22b
22a
22h
22c
22h
51e
53
22c-x
22d
28
29
22a
22e
22h
22c
22a
22d
22c-x
30d
30c
30a
30b
30
22a
22c
51e
52
22h
22m
22z

Fig. 12

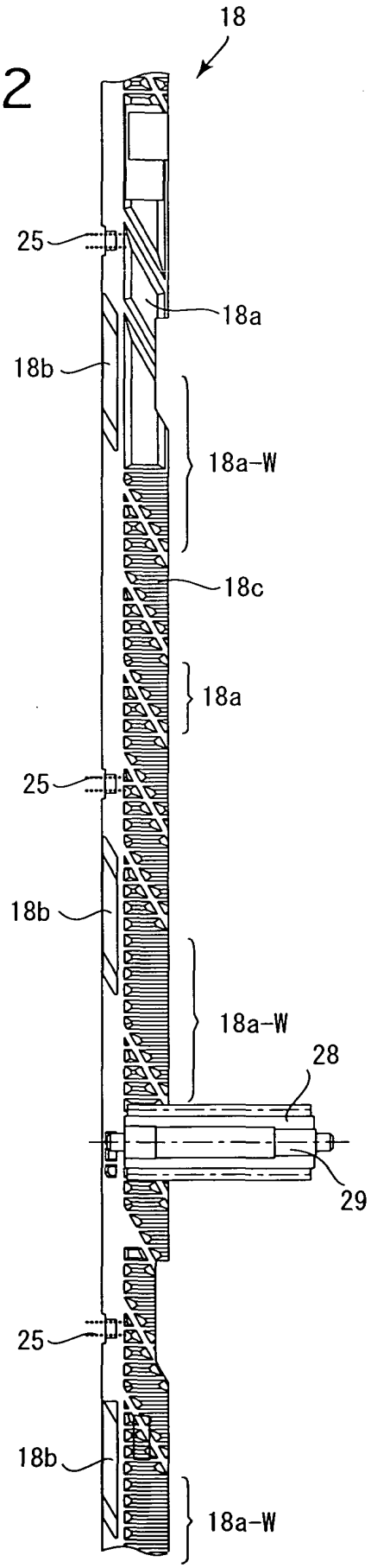

18
25
18a
18b
18a-W
18c
18a
25
18b
18a-W
28
29
25
18b
18a-W

Fig. 13

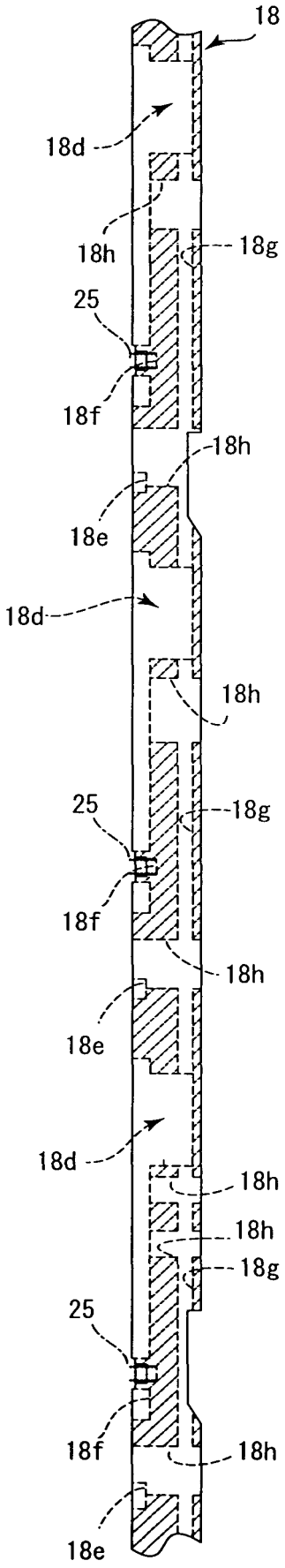

18
18d
18h
18g
25
18f
18h
18e
18d
18h
25
18g
18f
18h
18e
18d
18h
18h
18g
25
18f
18h
18e

Fig. 14

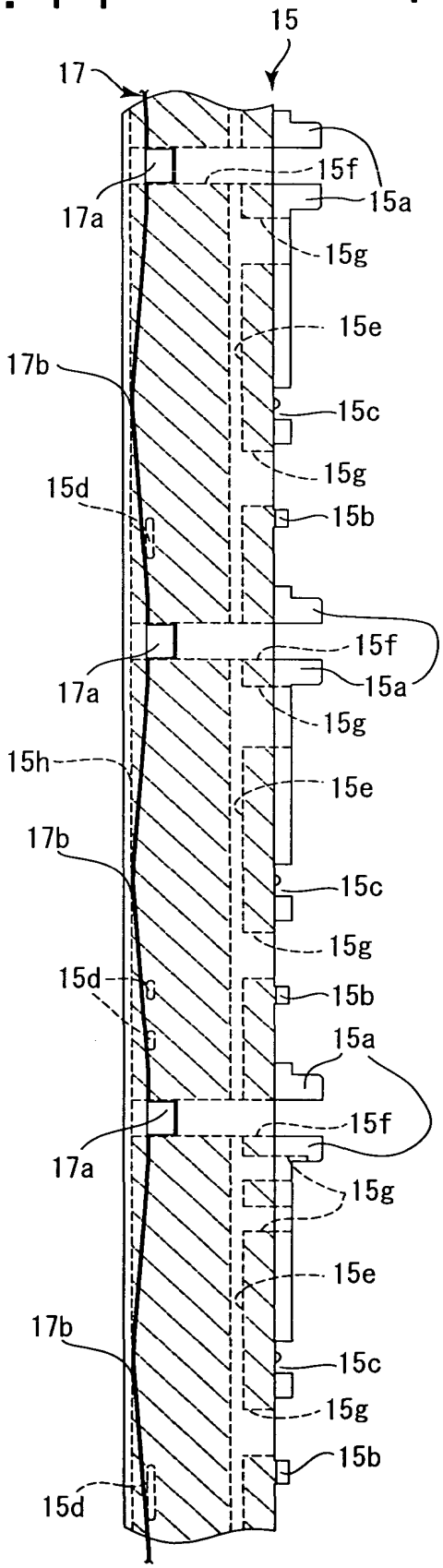

15
17
15f
15a
17a
15g
15e
17b
15c
15g
15d
15b
15f
15a
17a
15g
15h
15e
17b
15c
15g
15d
15b
15a
15f
17a
15g
15e
17b
15c
15g
15b
15d

Fig. 15

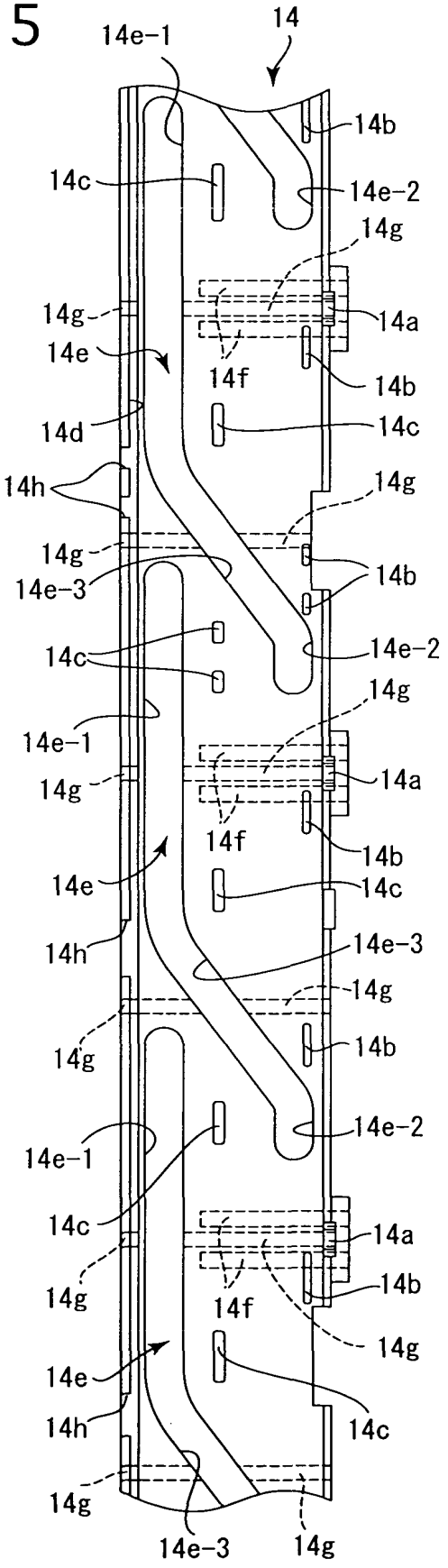

14
14e-1
14b
14c
14e-2
14g
14g
14a
14e
14f
14b
14d
14c
14h
14g
14g
14b
14e-3
14c
14e-2
14g
14e-1
14g
14a
14f
14b
14e
14c
14h
14e-3
14g
14g
14b
14e-2
14e-1
14c
14a
14g
14f
14b
14e
14g
14h
14c
14g
14e-3
14g

Fig. 16

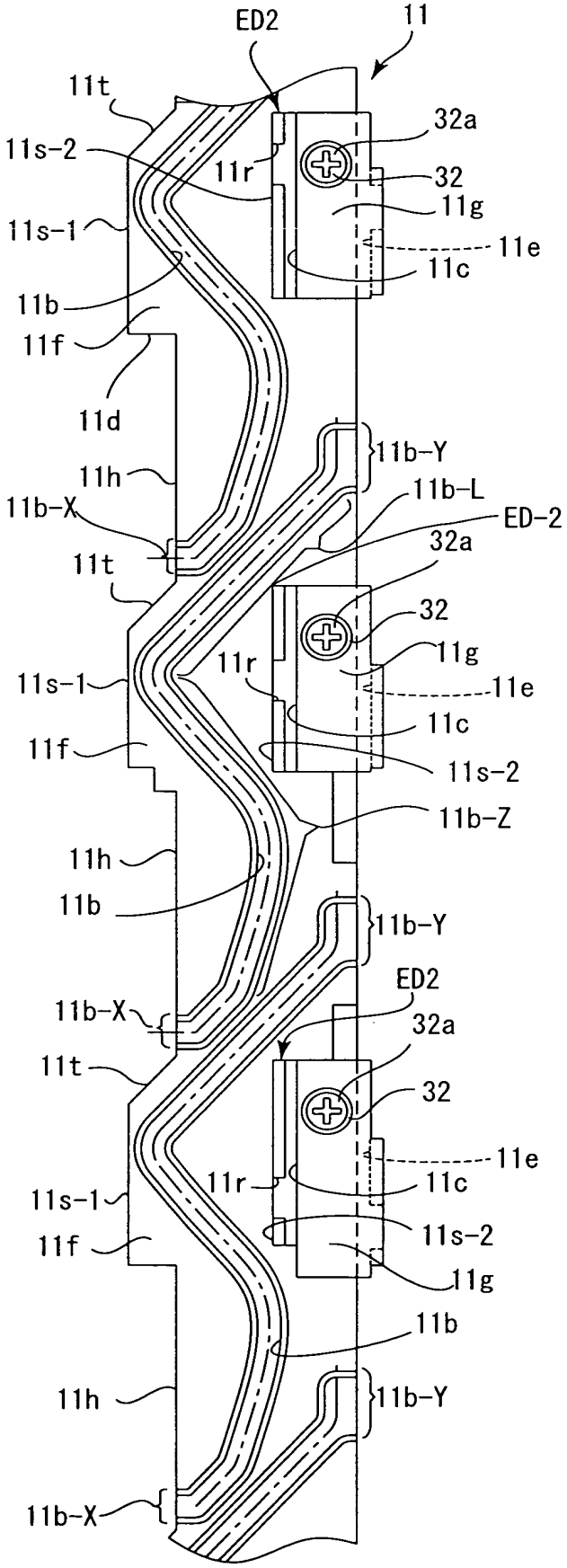

ED2
11
11t
32a
11s-2
11r
32
11g
11s-1
11e
11c
11b
11f
11d
11b-Y
11h
11b-L
11b-X
ED-2
11t
32a
32
11g
11r
11s-1
11e
11c
11f
11s-2
11b-Z
11h
11b
11b-Y
ED2
11b-X
32a
11t
32
11e
11r
11c
11s-1
11s-2
11f
11g
11b
11h
11b-Y
11b-X

Fig. 17

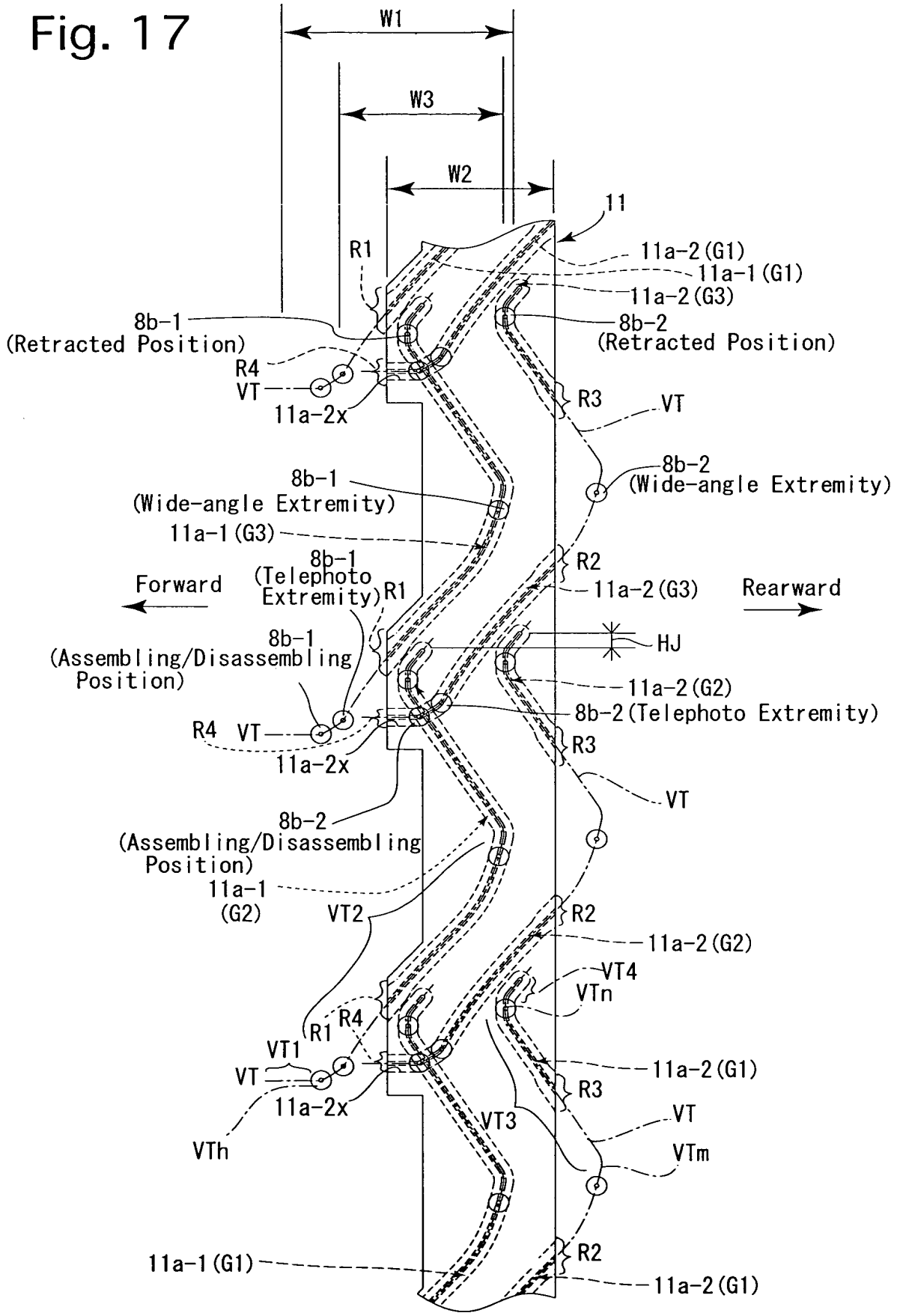

W1
W3
W2
11
R1
11a-2(G1)
11a-1(G1)
11a-2(G3)
8b-1
(Retracted Position)
8b-2
(Retracted Position)
R4
VT
11a-2x
R3
VT
8b-1
(Wide-angle Extremity)
8b-2
(Wide-angle Extremity)
11a-1(G3)
R2
8b-1
(Telephoto
Extremity)
R1
11a-2(G3)
Forward
Rearward
8b-1
(Assembling/Disassembling
Position)
HJ
11a-2(G2)
8b-2(Telephoto Extremity)
R4
VT
11a-2x
R3
VT
8b-2
(Assembling/Disassembling
Position)
11a-1
(G2)
VT2
R2
11a-2(G2)
VT4
VTn
R1
R4
VT1
VT
11a-2x
11a-2(G1)
R3
VT3
VT
VTm
VTh
11a-1(G1)
R2
11a-2(G1)

Fig . 19

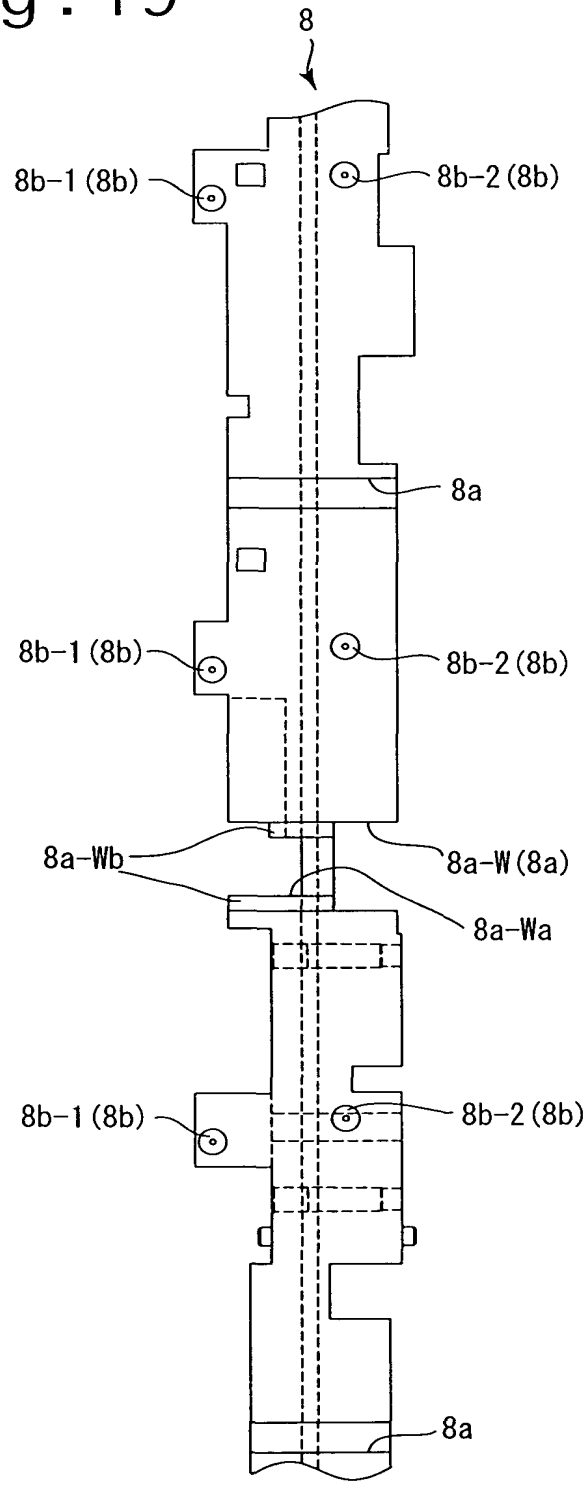

8
8b-1 (8b)
8b-2 (8b)
8a
8b-1 (8b)
8b-2 (8b)
8a-Wb
8a-W (8a)
8a-Wa
8b-1 (8b)
8b-2 (8b)
8a

Fig . 18

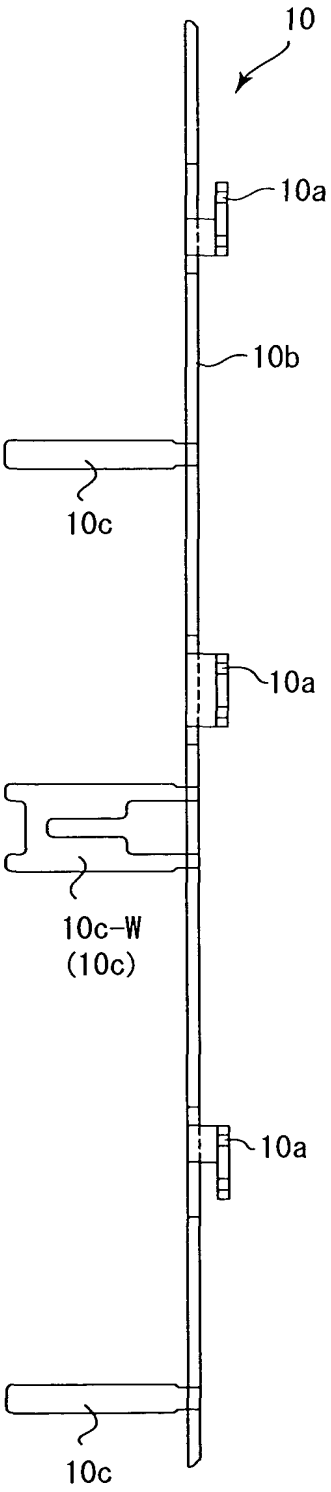

10
10a
10b
10c
10a
10c-W
(10c)
10a
10c

Fig. 20

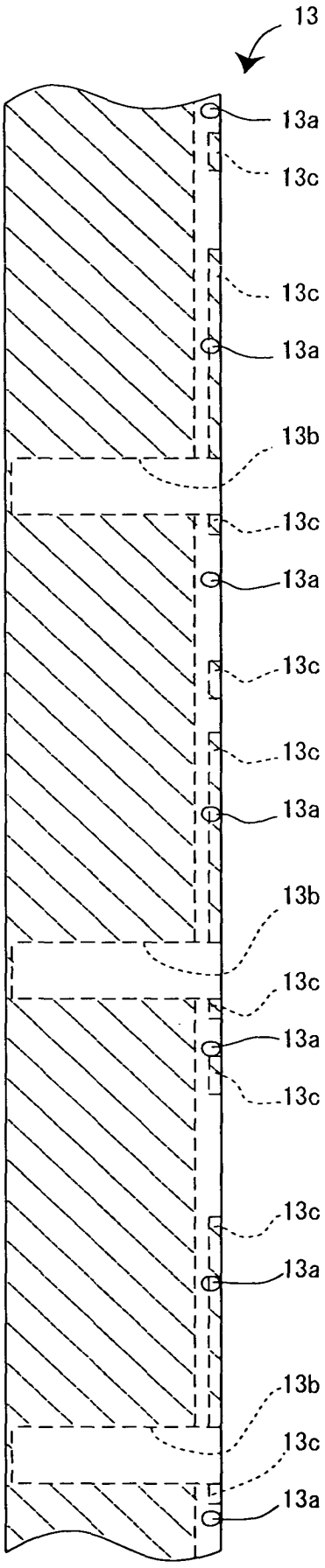

13
13a
13c
13c
13a
13b
13c
13a
13c
13c
13a
13b
13c
13a
13c
13c
13a
13b
13c
13a

Fig. 21

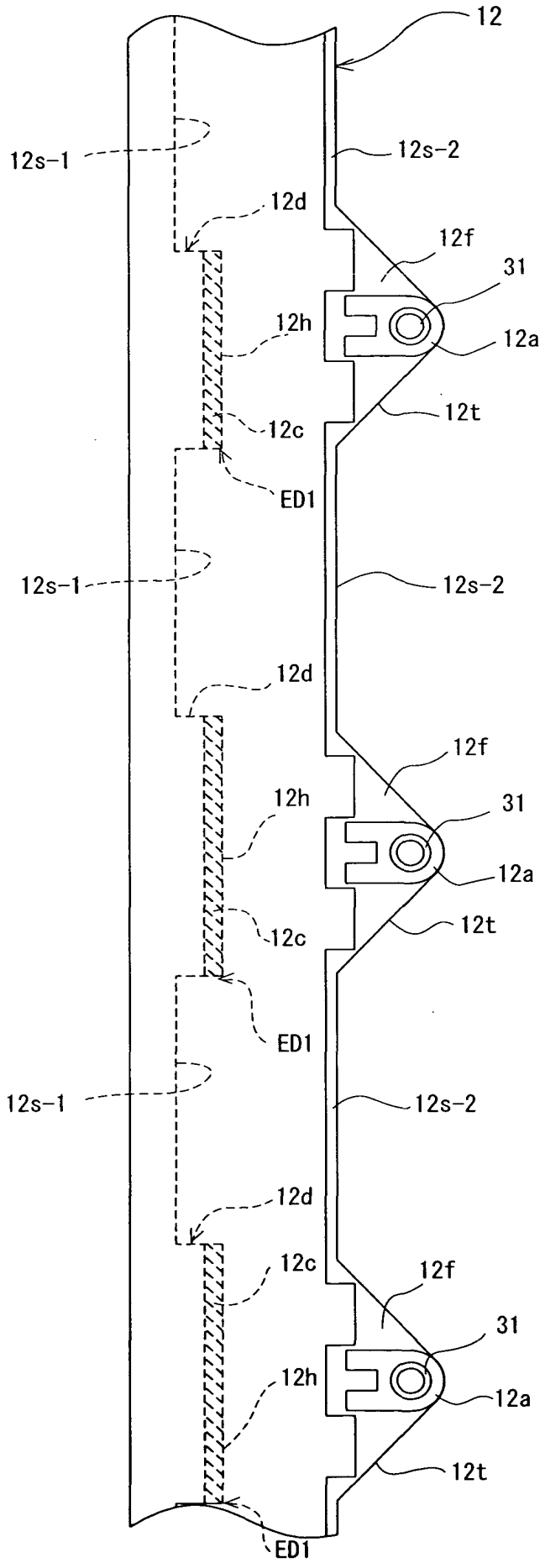

12
12s-1
12s-2
12d
12f
31
12h
12a
12t
12c
ED1
12s-1
12s-2
12d
12f
12h
31
12a
12t
12c
ED1
12s-1
12s-2
12d
12c
12f
31
12h
12a
12t
ED1

Fig. 22

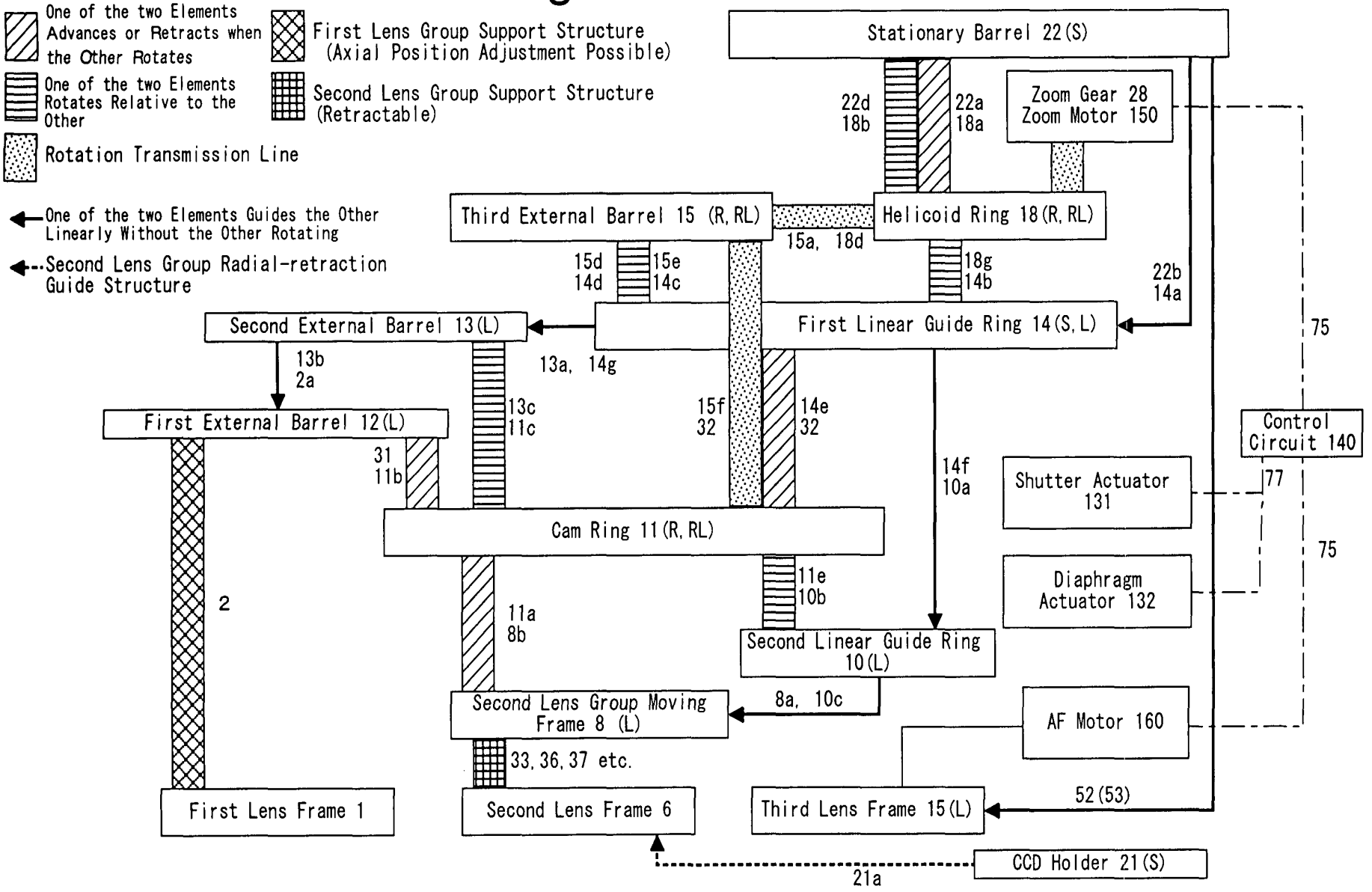

One of the two Elements Advances or Retracts when the Other Rotates
One of the two Elements Rotates Relative to the Other
Rotation Transmission Line
First Lens Group Support Structure (Axial Position Adjustment Possible)
Second Lens Group Support Structure (Retractable)
One of the two Elements Guides the Other Linearly Without the Other Rotating
Second Lens Group Radial-retraction Guide Structure
Stationary Barrel 22(S)
22d 18b
22a 18a
Zoom Gear 28 Zoom Motor 150
Third External Barrel 15 (R, RL)
15a, 18d
Helicoid Ring 18(R, RL)
15d 14d
15e 14c
18g 14b
22b 14a
Second External Barrel 13(L)
First Linear Guide Ring 14(S, L)
13b 2a
13a, 14g
75
First External Barrel 12(L)
13c 11c
15f 32
14e 32
Control Circuit 140
31 11b
14f 10a
Shutter Actuator 131
77
Cam Ring 11(R, RL)
75
11e 10b
Diaphragm Actuator 132
2
11a 8b
Second Linear Guide Ring 10(L)
Second Lens Group Moving Frame 8 (L)
8a, 10c
AF Motor 160
33, 36, 37 etc.
First Lens Frame 1
Second Lens Frame 6
Third Lens Frame 15(L)
52(53)
CCD Holder 21(S)
21a

Fig. 23

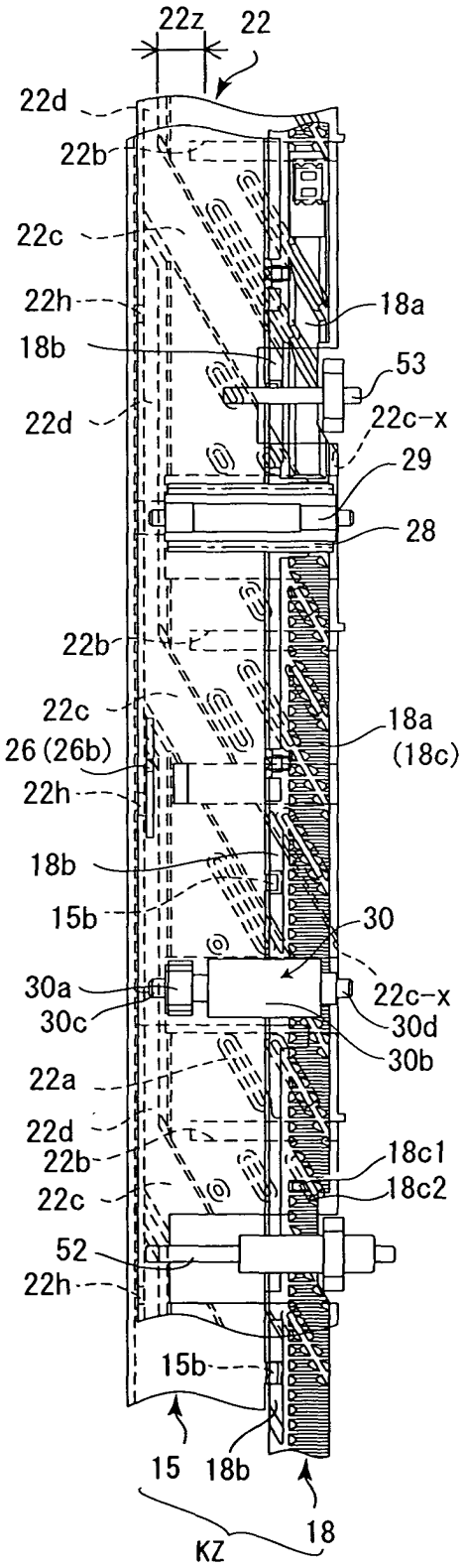

22z
22
22d
22b
22c
22h
18b
22d
18a
53
22c-x
29
28
22b
22c
26 (26b)
22h
18b
15b
18a
(18c)
30
30a
30c
22c-x
30d
30b
22a
22d
22b
22c
52
22h
18c1
18c2
15b
15
18b
18
KZ

Fig. 24

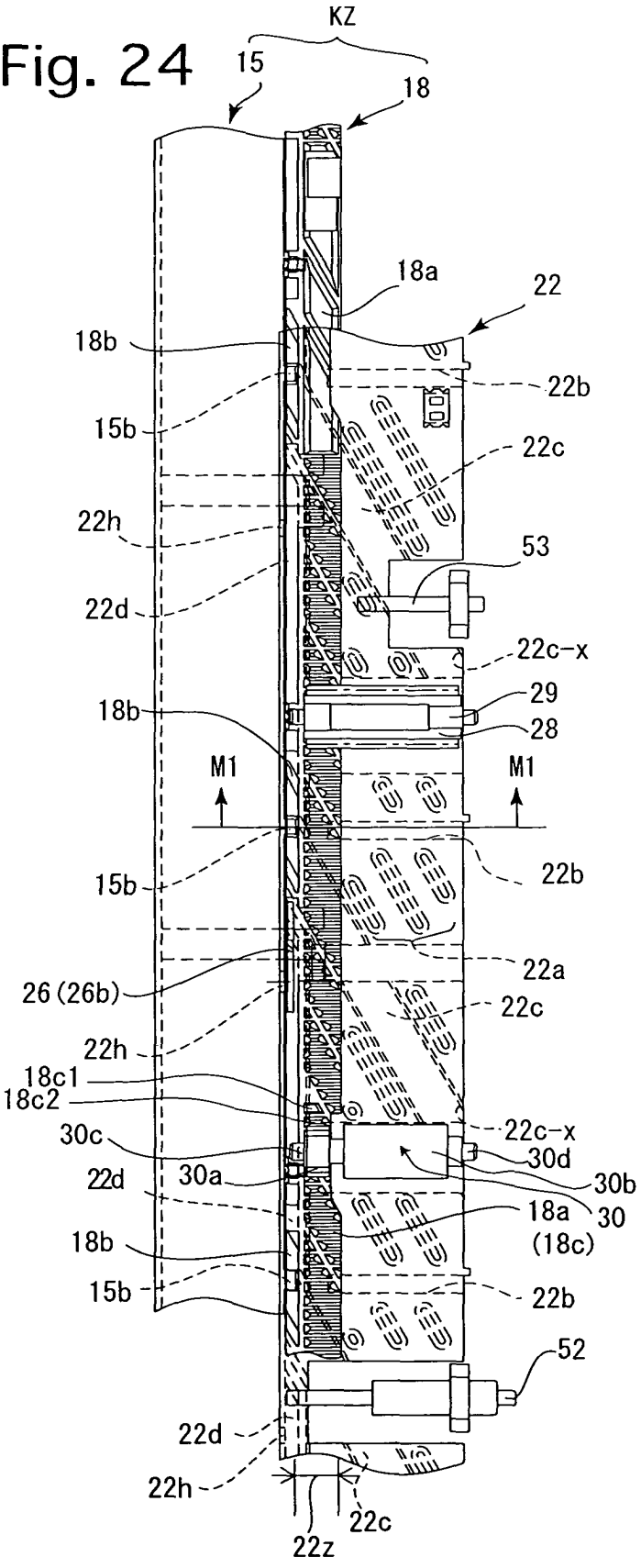

KZ
15
18
18a
22
18b
22b
15b
22c
22h
53
22d
22c-x
29
18b
28
M1
M1
22b
15b
22a
26 (26b)
22c
22h
18c1
18c2
22c-x
30c
30d
22d
30a
30b
18a
30
(18c)
18b
15b
22b
52
22d
22h
22c
22z

Fig. 25

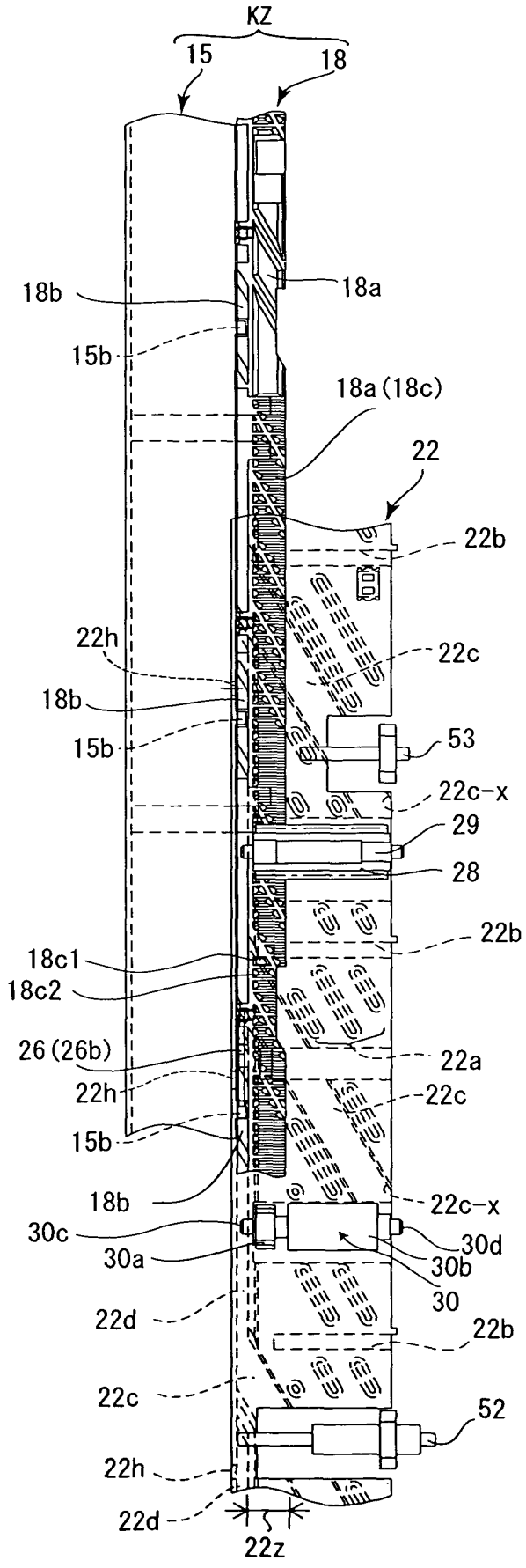

KZ
15
18
18b
18a
15b
18a (18c)
22
22b
22h
22c
18b
53
15b
22c-x
29
28
22b
18c1
18c2
26 (26b)
22a
22h
22c
15b
18b
22c-x
30c
30d
30a
30b
30
22d
22b
22c
52
22h
22d
22z

Fig. 26

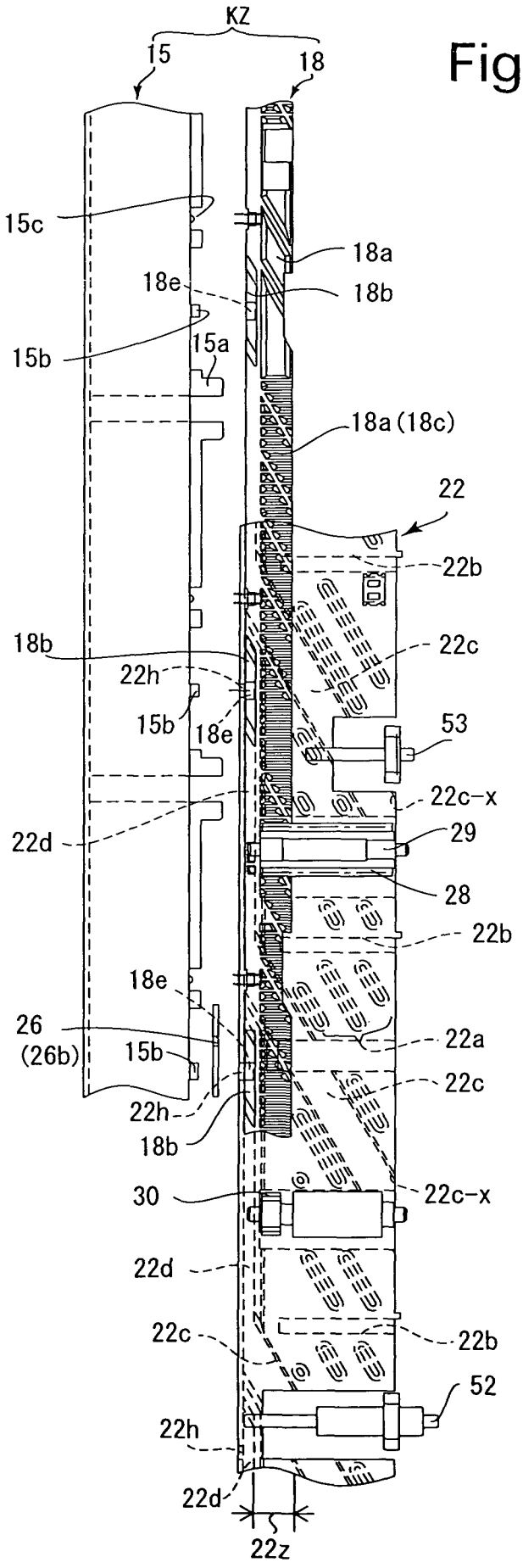

KZ
15
18
15c
18a
18e
18b
15b
15a
18a (18c)
22
22b
18b
22c
22h
15b
18e
53
22c-x
22d
29
28
22b
18e
26
(26b)
15b
22a
22c
22h
18b
30
22c-x
22d
22c
22b
52
22h
22d
22z

Fig. 27

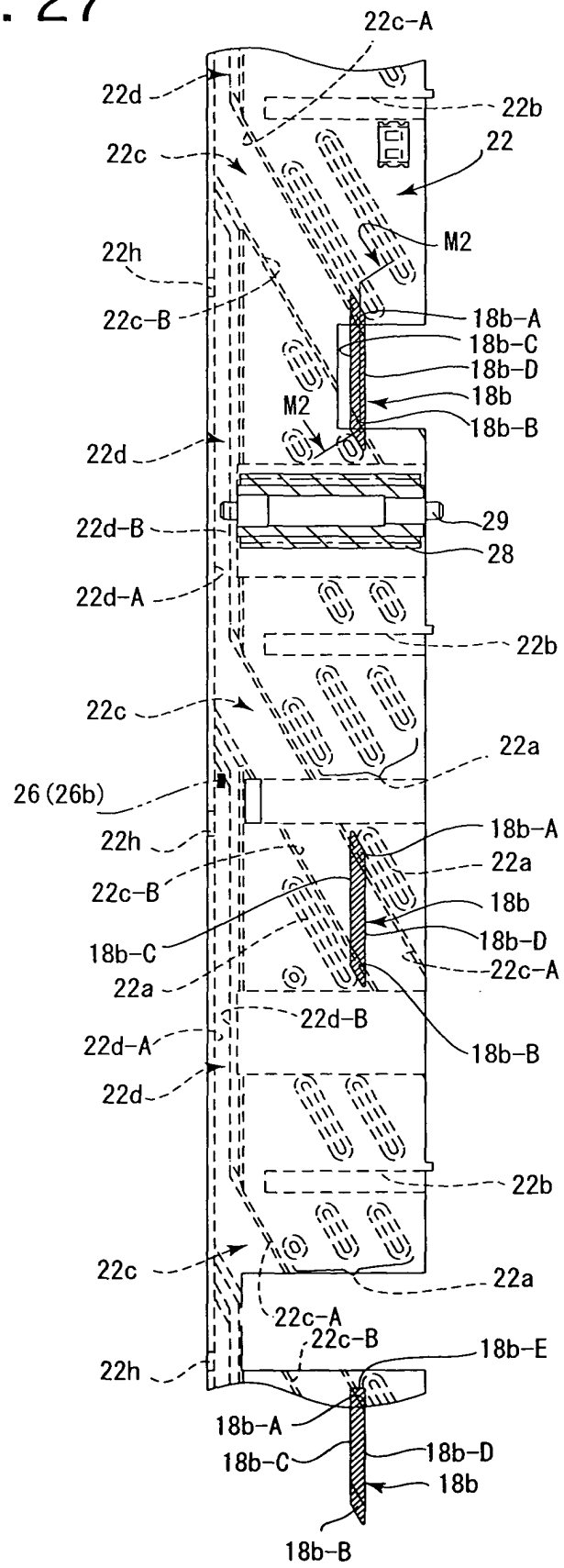

22c-A
22d
22b
22c
22
M2
22h
22c-B
18b-A
18b-C
18b-D
18b
M2
18b-B
22d
29
22d-B
28
22d-A
22b
22c
22a
26 (26b)
18b-A
22h
22a
22c-B
18b
18b-C
18b-D
22a
22c-A
22d-B
22d-A
18b-B
22d
22b
22c
22a
22c-A
22c-B
18b-E
22h
18b-A
18b-C
18b-D
18b
18b-B

Fig. 28

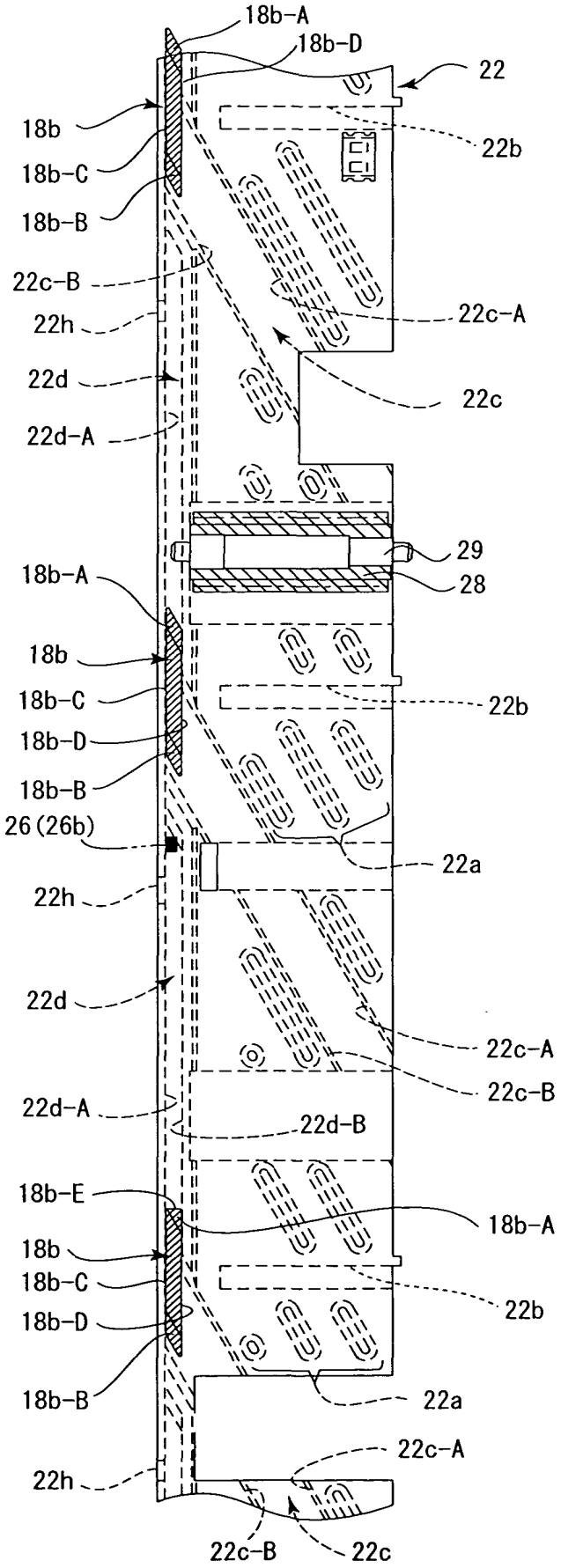

18b-A
18b-D
22
18b
22b
18b-C
18b-B
22c-B
22c-A
22h
22d
22c
22d-A
29
18b-A
28
18b
22b
18b-C
18b-D
18b-B
26 (26b)
22a
22h
22d
22c-A
22c-B
22d-A
22d-B
18b-E
18b-A
18b
22b
18b-C
18b-D
18b-B
22a
22c-A
22h
22c-B
22c

Fig. 29

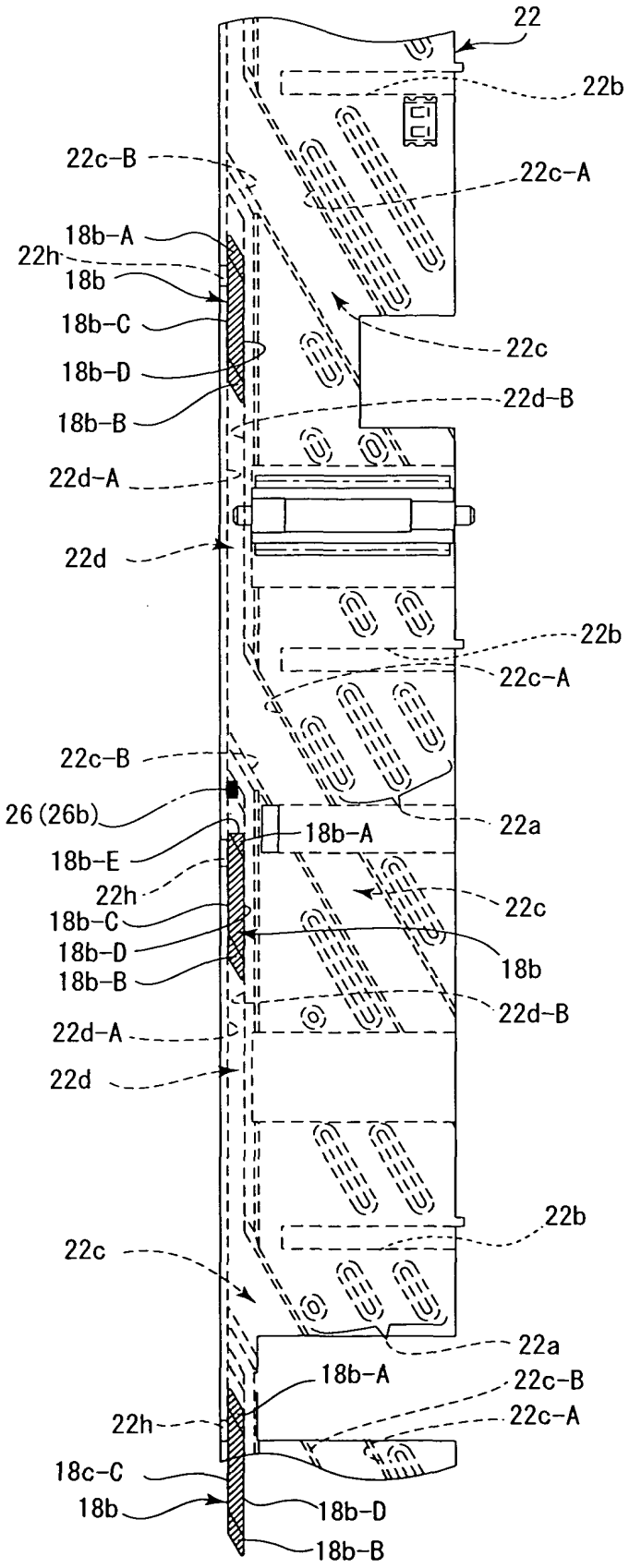

22
22b
22c-B
22c-A
18b-A
22h
18b
18b-C
22c
18b-D
22d-B
18b-B
22d-A
22d
22b
22c-A
22c-B
26 (26b)
22a
18b-A
18b-E
22h
22c
18b-C
18b-D
18b
18b-B
22d-B
22d-A
22d
22b
22c
22a
18b-A
22c-B
22h
22c-A
18c-C
18b
18b-D
18b-B

Fig. 30

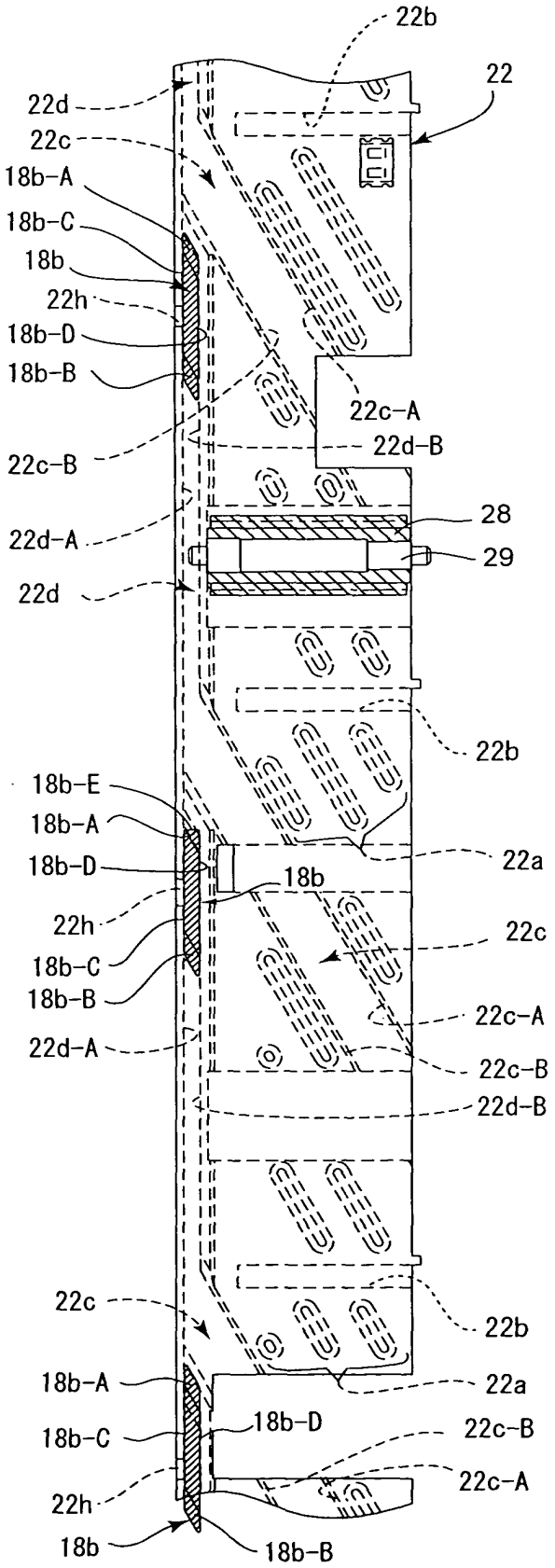

22b
22
22d
22c
18b-A
18b-C
18b
22h
18b-D
18b-B
22c-A
22d-B
22c-B
28
22d-A
29
22d
22b
18b-E
18b-A
22a
18b-D
18b
22h
22c
18b-C
18b-B
22c-A
22d-A
22c-B
22d-B
22c
22b
18b-A
22a
18b-C
18b-D
22c-B
22c-A
22h
18b
18b-B

Fig. 31

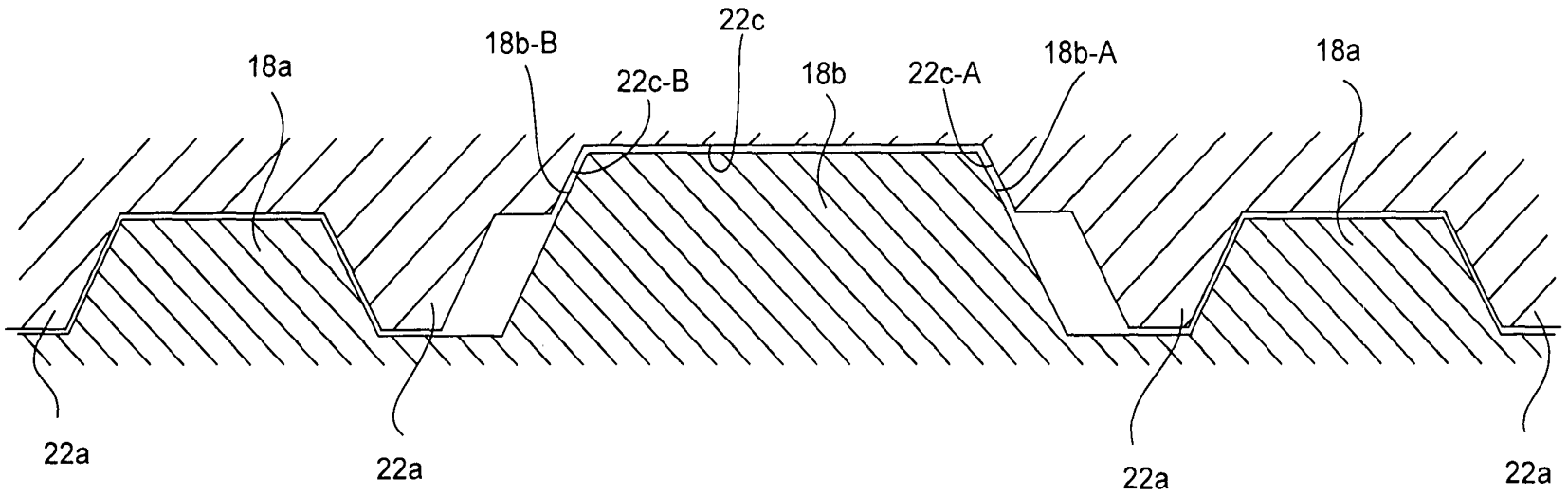


Fig. 32

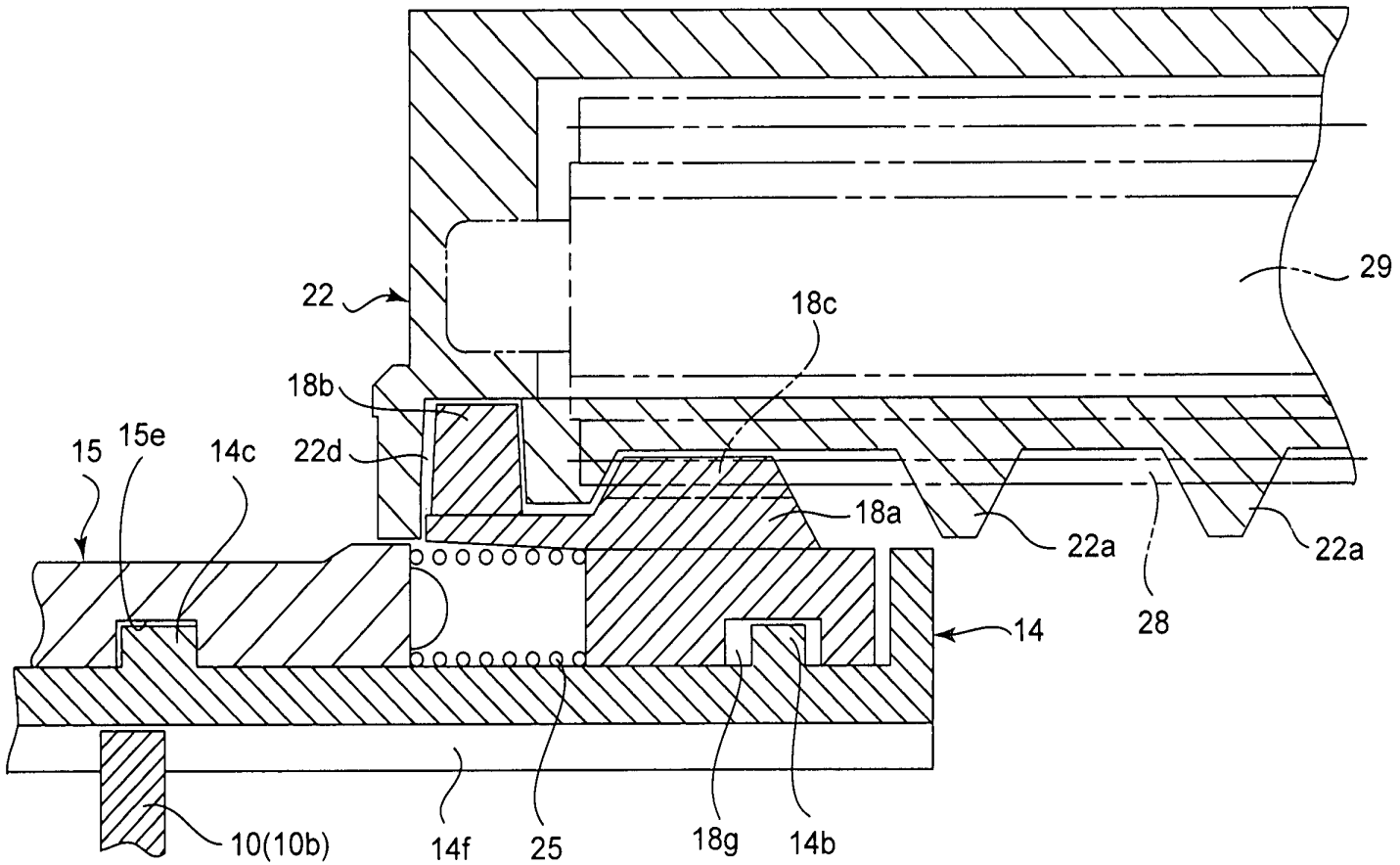

22
18c
29
18b
15
15e
14c
22d
18a
22a
22a
28
14
10(10b)
14f
25
18g
14b

Fig. 33

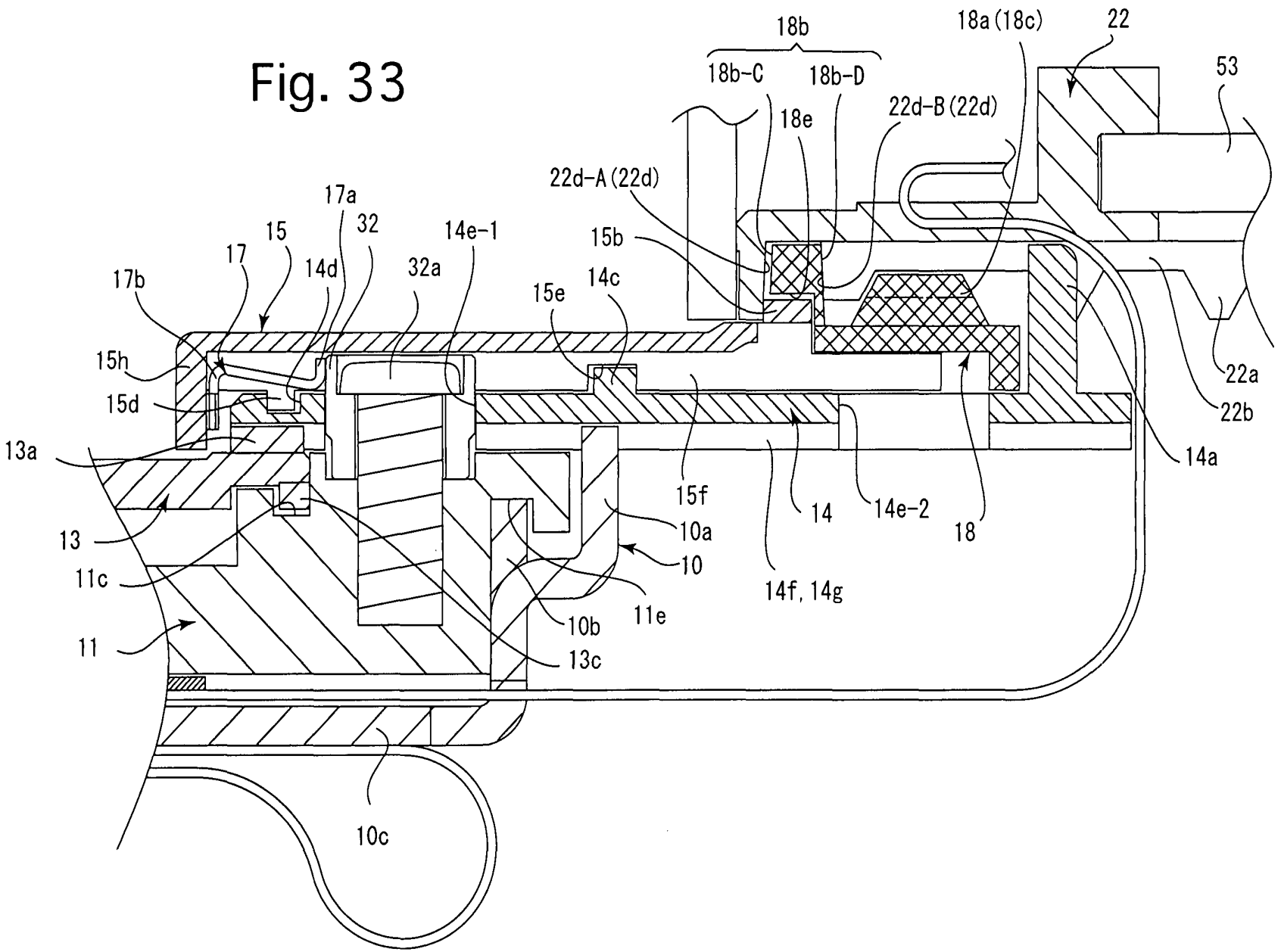

18b
18b-C
18b-D
18a (18c)
22
53
18e
22d-B (22d)
22d-A (22d)
15b
17a
32
14e-1
15
17
14d
32a
14c
15e
17b
15h
15d
13a
13
11c
11
10c
10b
13c
11e
10
10a
15f
14
14e-2
18
14f, 14g
14a
22a
22b

Fig. 34

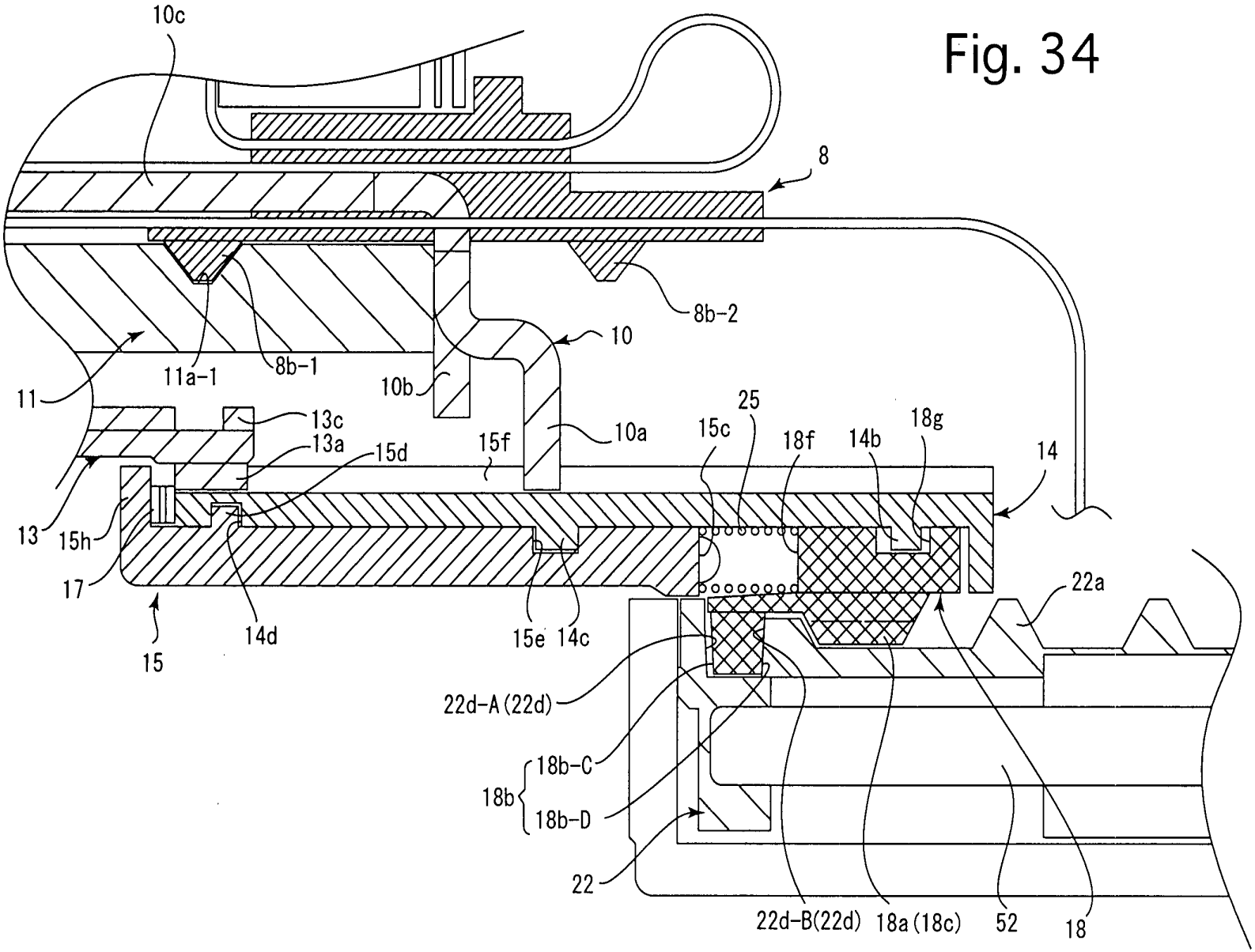

10c
8
8b-2
10
11
11a-1
8b-1
10b
13c
13a
15d
15f
10a
25
15c
18f
14b
18g
14
13
15h
17
15
14d
15e
14c
22a
22d-A(22d)
18b-C
18b
18b-D
22
22d-B(22d)
18a(18c)
52
18

Fig. 35

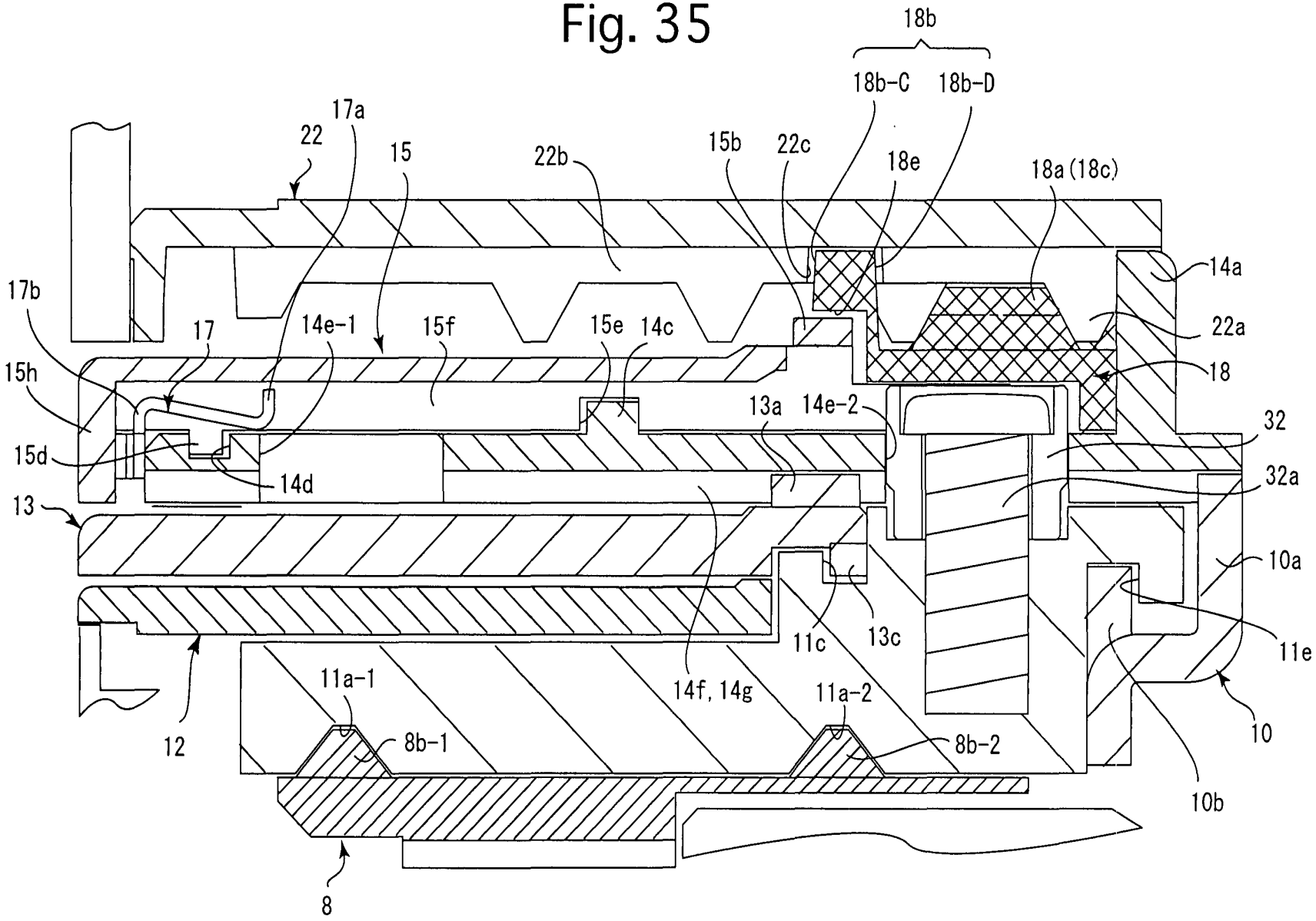

18b
18b-C
18b-D
17a
22
15
22b
15b
22c
18e
18a (18c)
14a
17b
17
14e-1
15f
15e
14c
22a
18
15h
13a
14e-2
32
15d
14d
32a
13
10a
11c
13c
11e
14f, 14g
11a-2
11a-1
8b-1
8b-2
12
10
10b
8

Fig. 36

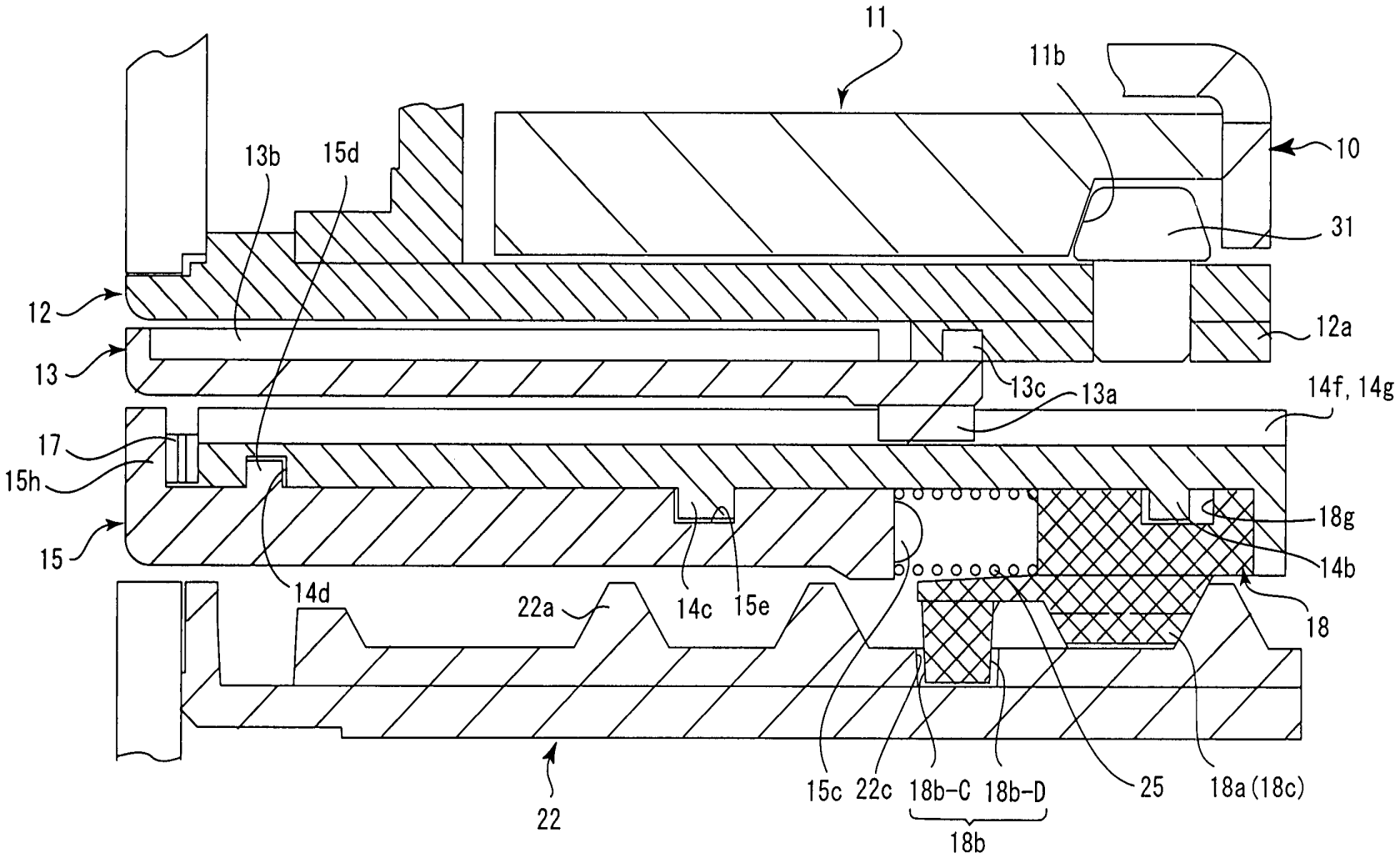

11
11b
10
13b
15d
31
12
12a
13
13c
13a
14f, 14g
17
15h
18g
15
14b
14d
22a
14c
15e
18
22
15c
22c
18b-C
18b-D
25
18a (18c)
18b

Fig. 37

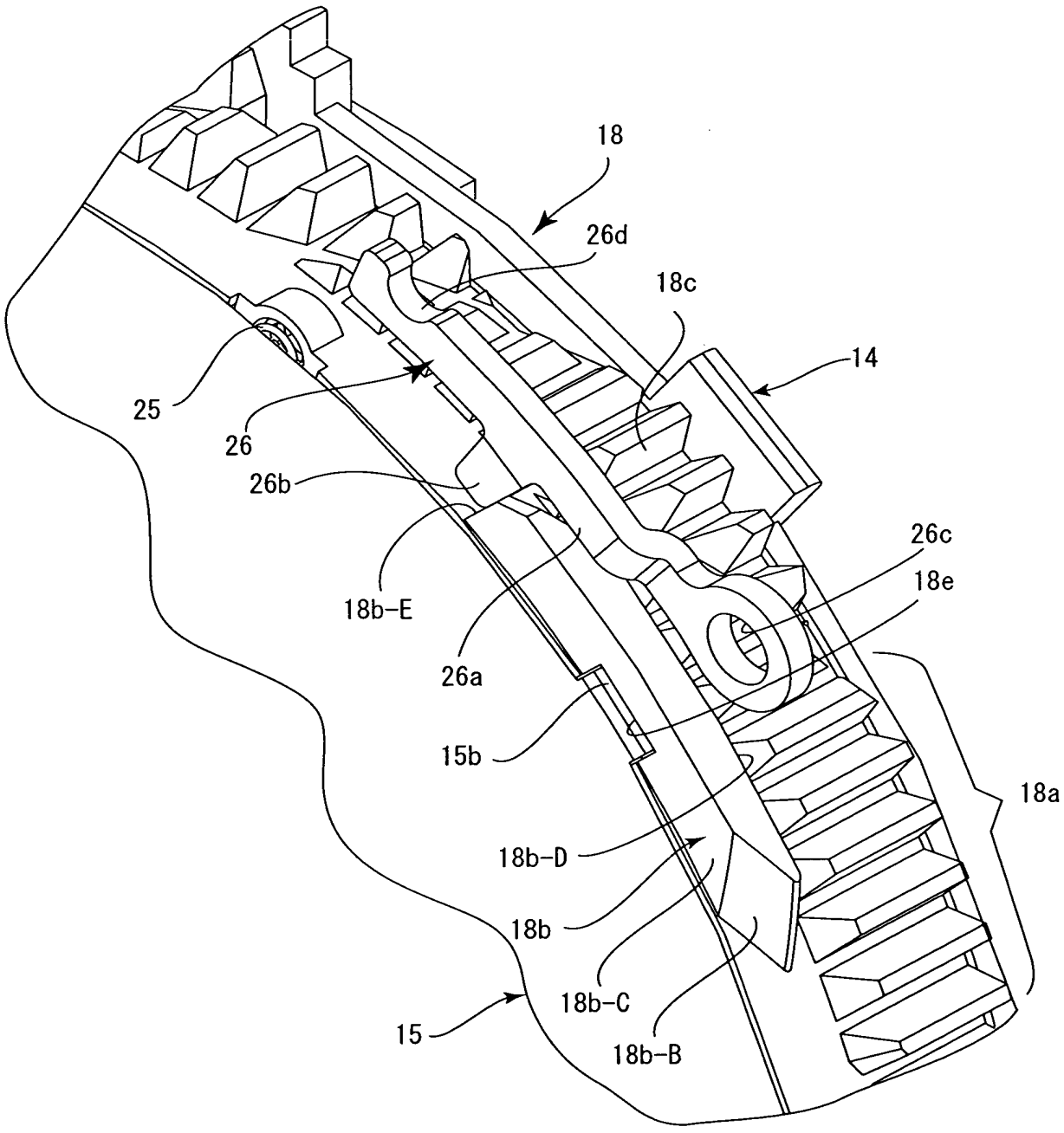

18
26d
18c
14
25
26
26b
18b-E
26a
26c
18e
15b
18a
18b-D
18b
18b-C
15
18b-B

Fig. 38

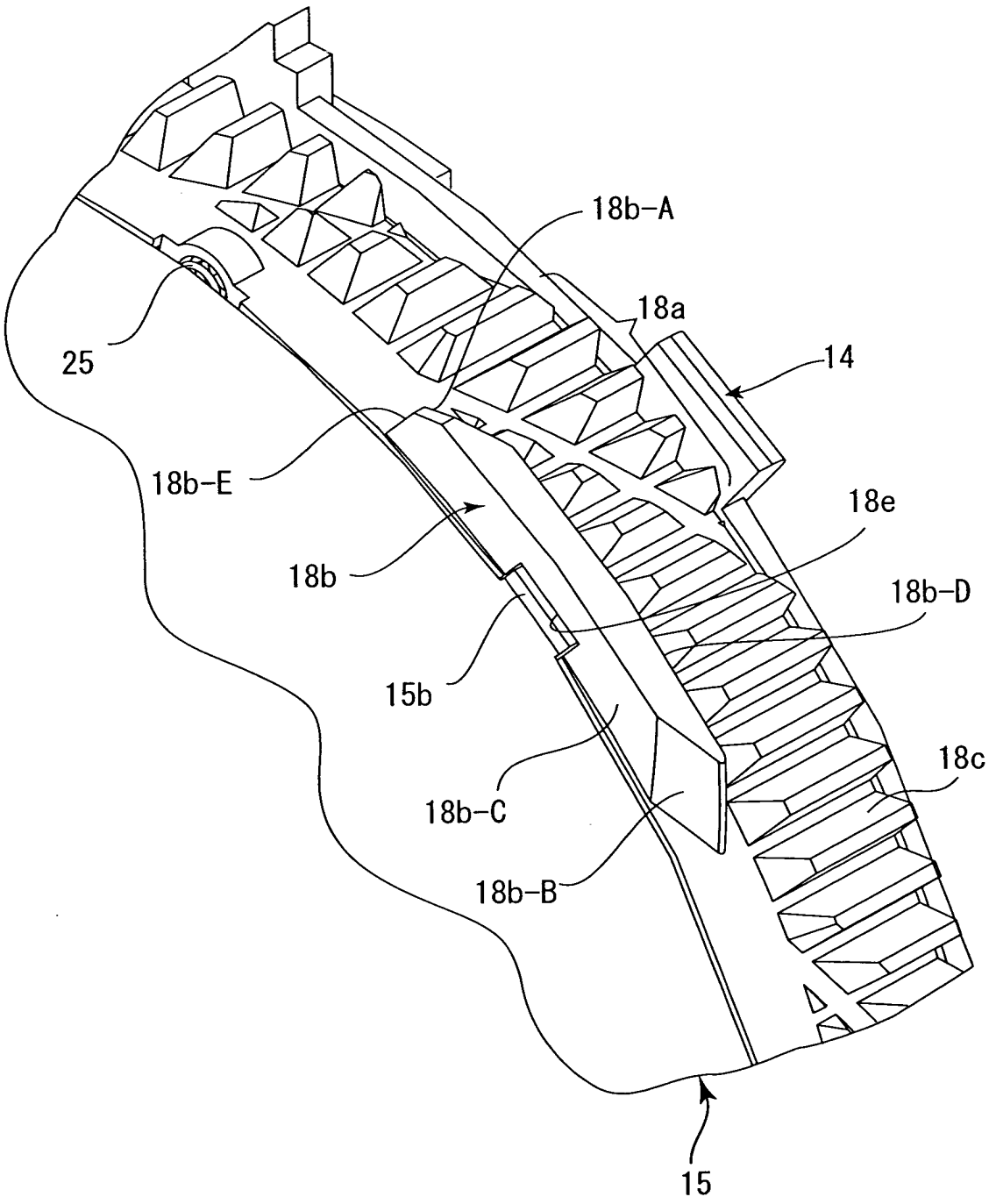


Fig. 39

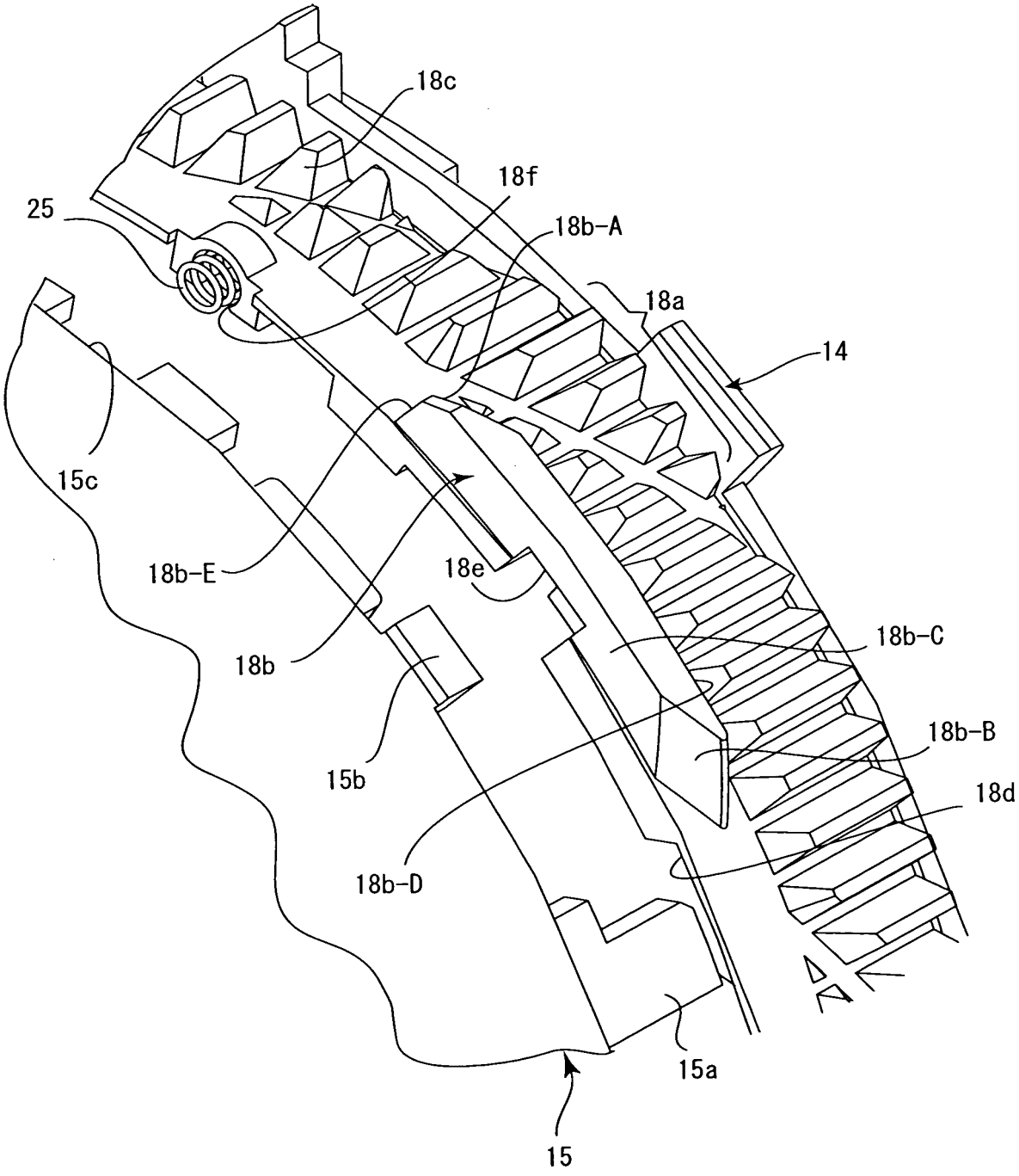

18c
18f
25
18b-A
18a
14
15c
18b-E
18e
18b-C
18b
18b-B
15b
18d
18b-D
15a
15

Fig . 40

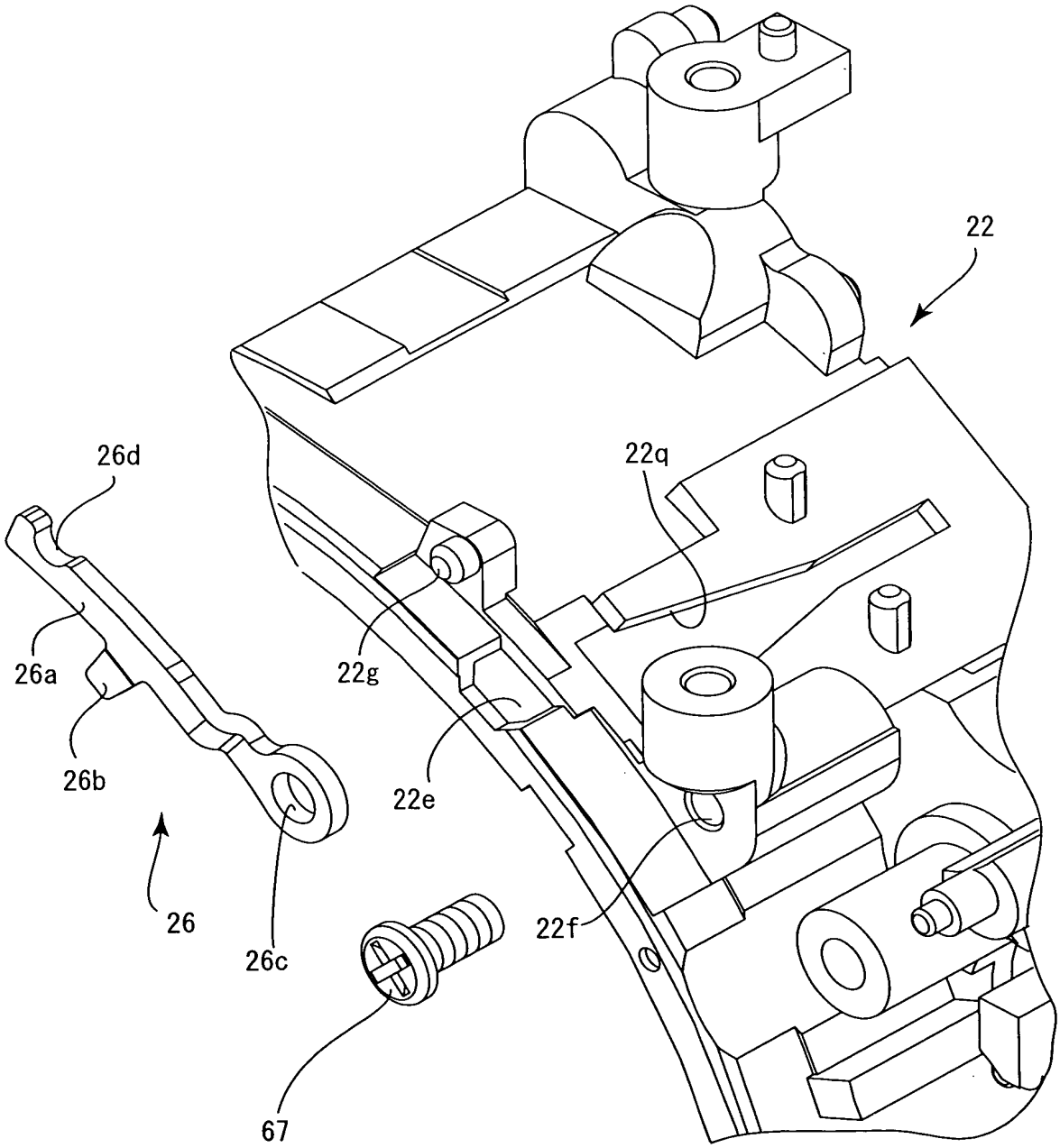


Fig . 41

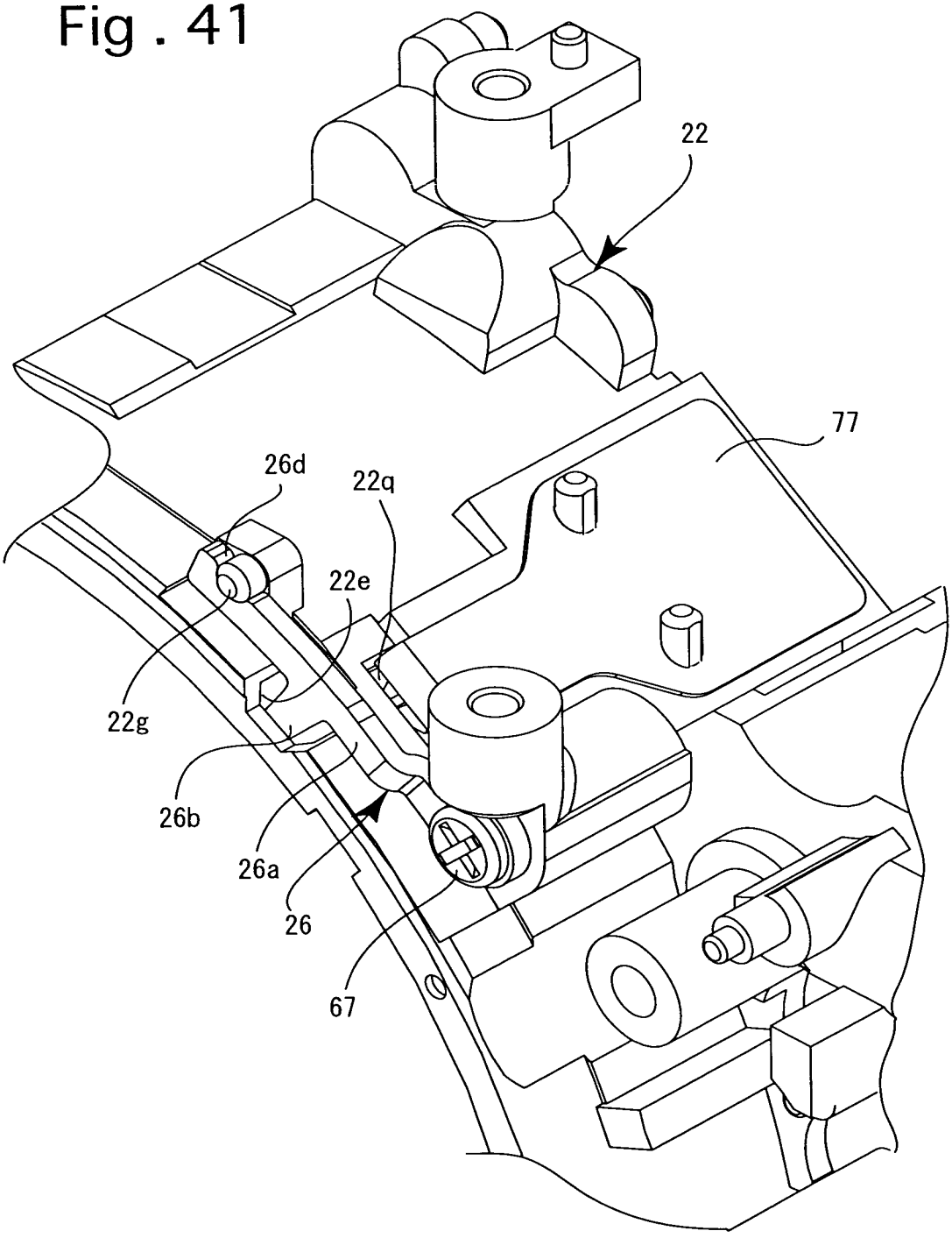


Fig. 42

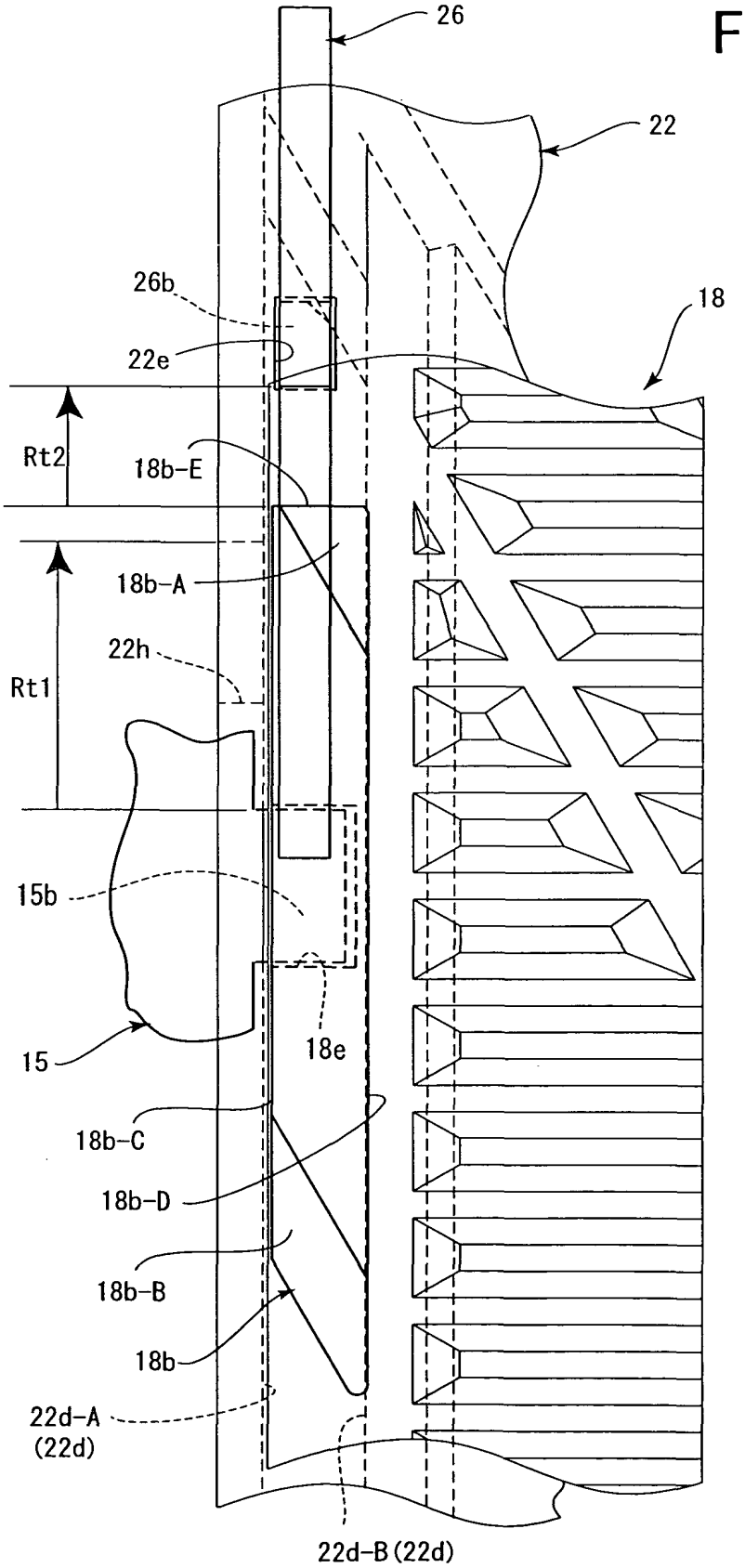

26
22
26b
18
22e
Rt2
18b-E
18b-A
22h
Rt1
15b
15
18e
18b-C
18b-D
18b-B
18b
22d-A
(22d)
22d-B (22d)

Fig. 43

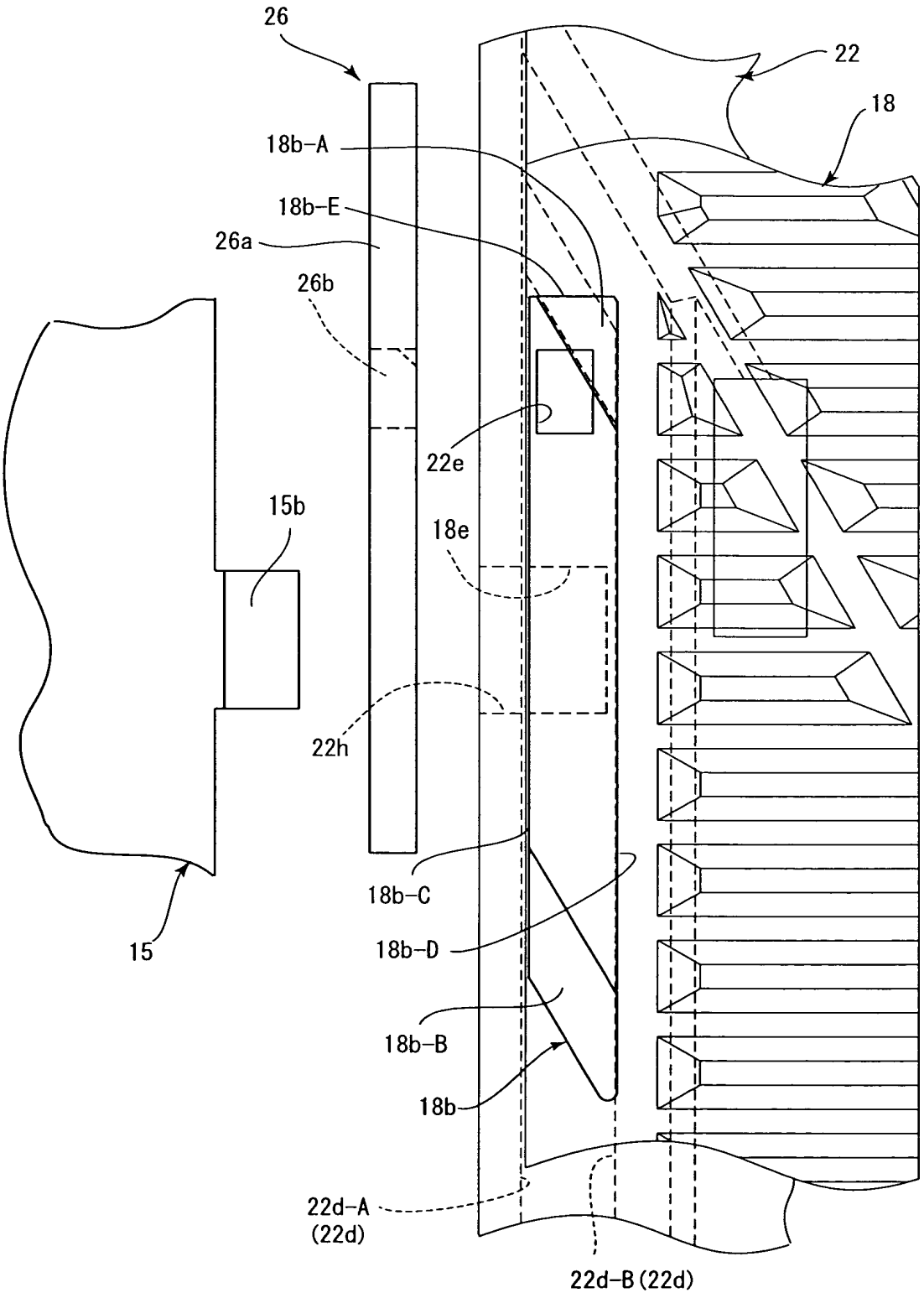

26
22
18
18b-A
18b-E
26a
26b
22e
15b
18e
22h
18b-C
15
18b-D
18b-B
18b
22d-A
(22d)
22d-B (22d)

Fig. 44

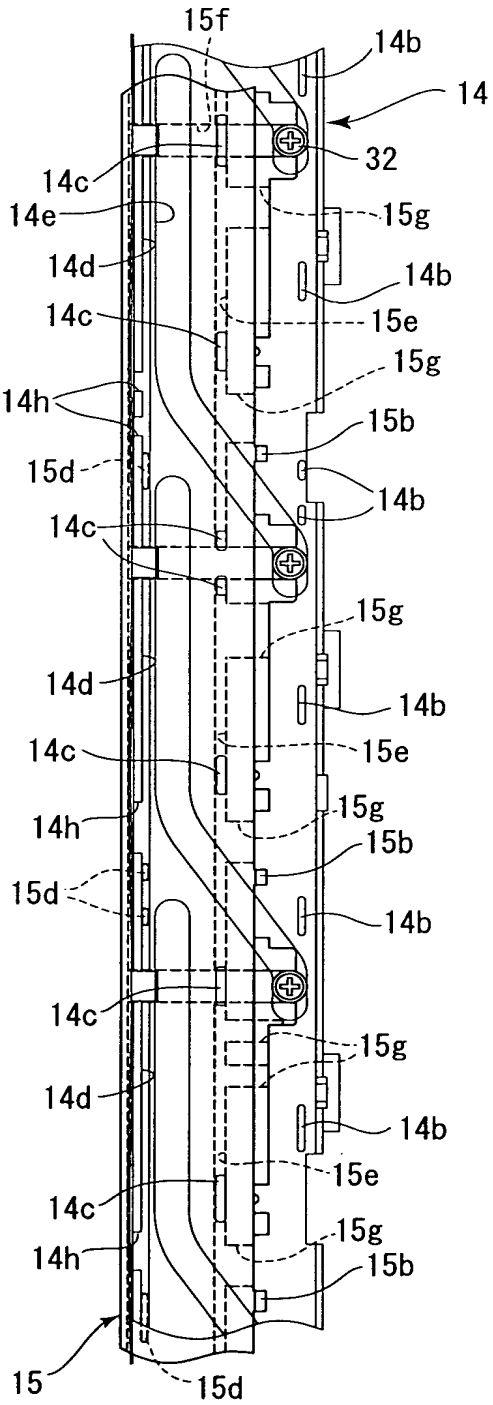

15f
14b
14
32
14c
14e
15g
14d
14b
14c
15e
15g
14h
15b
15d
14b
14c
15g
14d
14b
14c
15e
14h
15g
15b
15d
14b
14c
15g
14d
14b
14c
15e
14h
15g
15b
15
15d

Fig. 45

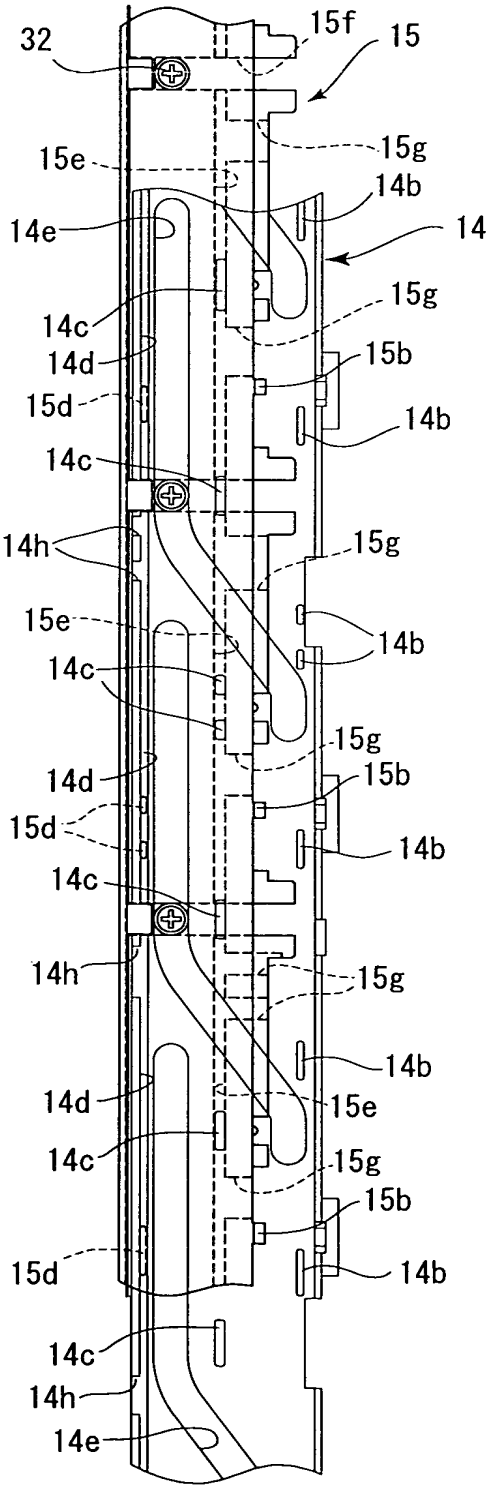

32
15f
15
15g
15e
14b
14e
14
15g
14c
15b
14d
15d
14b
14c
14h
15g
15e
14b
14c
15g
14d
15b
15d
14b
14c
14h
15g
14b
14d
15e
14c
15g
15b
15d
14b
14c
14h
14e

Fig. 46

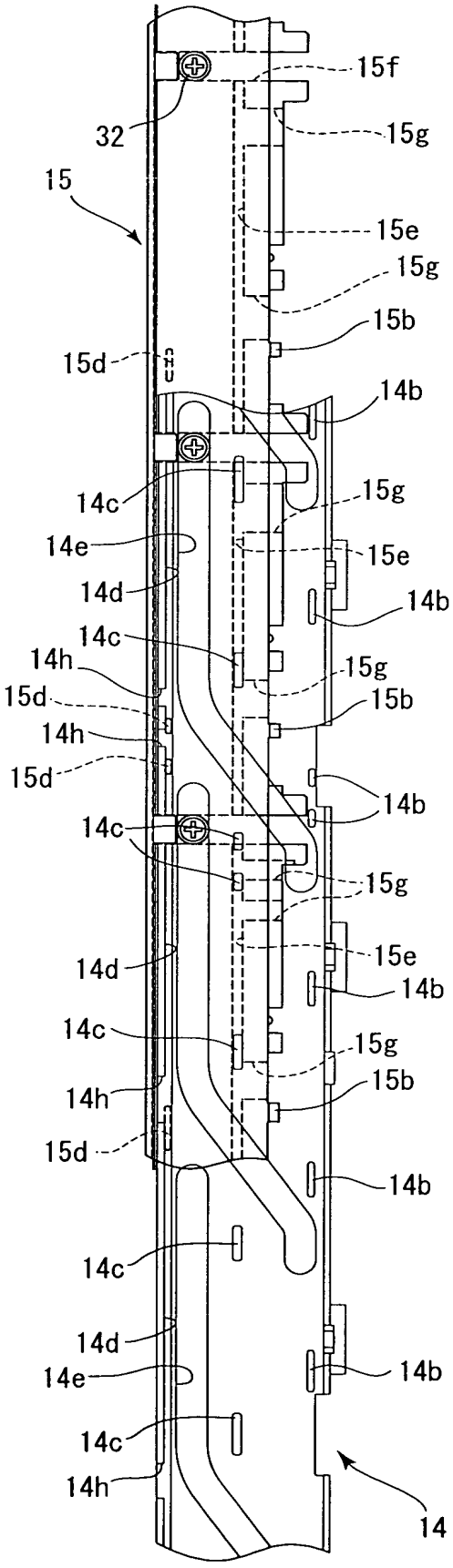

15f
32
15g
15
15e
15g
15b
15d
14b
14c
15g
14e
15e
14d
14b
14c
14h
15g
15d
15b
14h
15d
14b
14c
15g
15e
14d
14b
14c
15g
15b
14h
15d
14b
14c
14d
14e
14b
14c
14h
14

Fig. 47

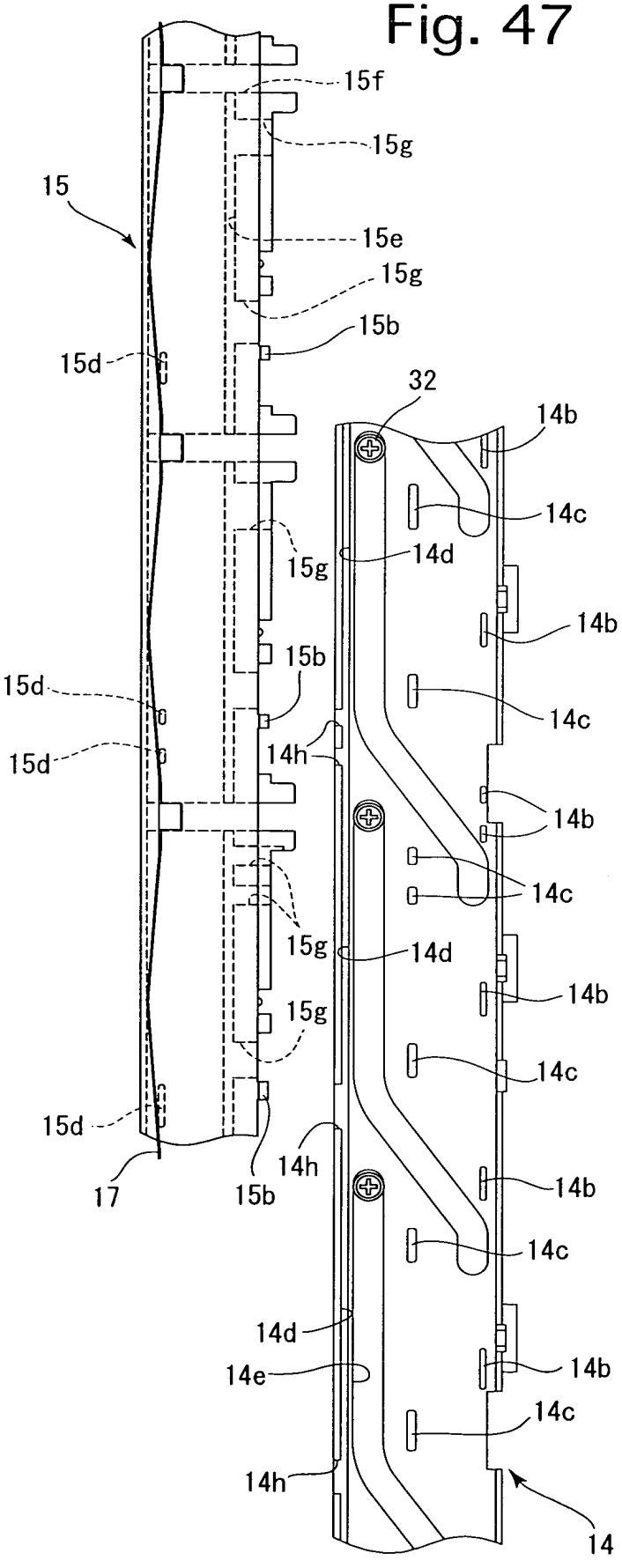

15f
15g
15
15e
15g
15b
15d
32
14b
14c
15g
14d
14b
15b
15d
14c
15d
14h
14b
14c
15g
14d
14b
15g
14c
15d
14h
14b
17
15b
14c
14d
14e
14b
14c
14h
14

Fig. 48

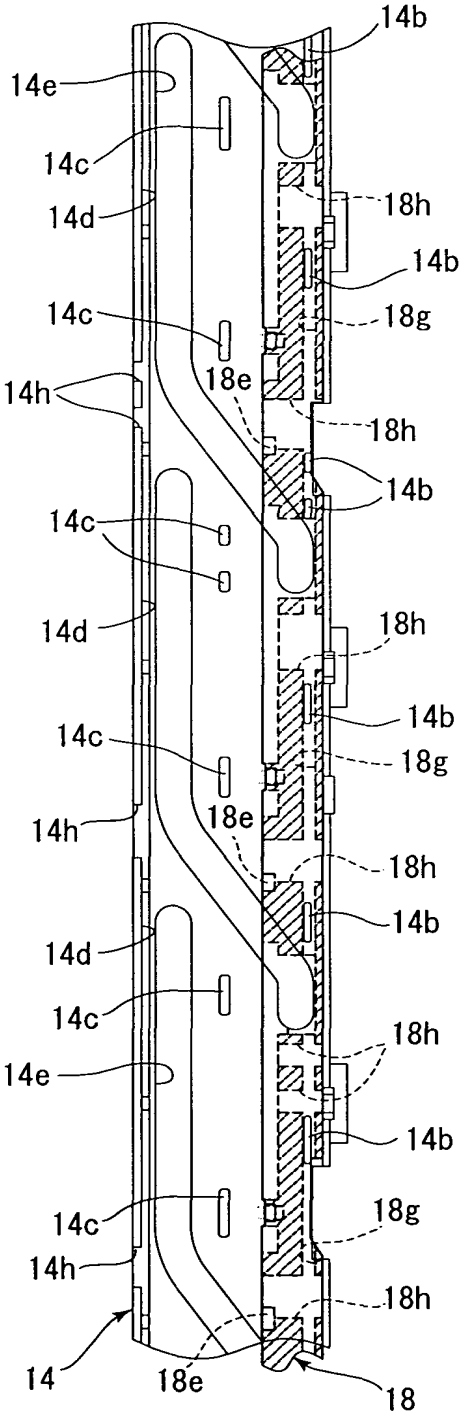

14b
14e
14c
14d
18h
14b
14c
18g
14h
18e
18h
14b
14c
14d
18h
14b
14c
18g
14h
18e
18h
14b
14d
14c
18h
14e
14b
14c
18g
14h
18h
14
18e
18

Fig. 49

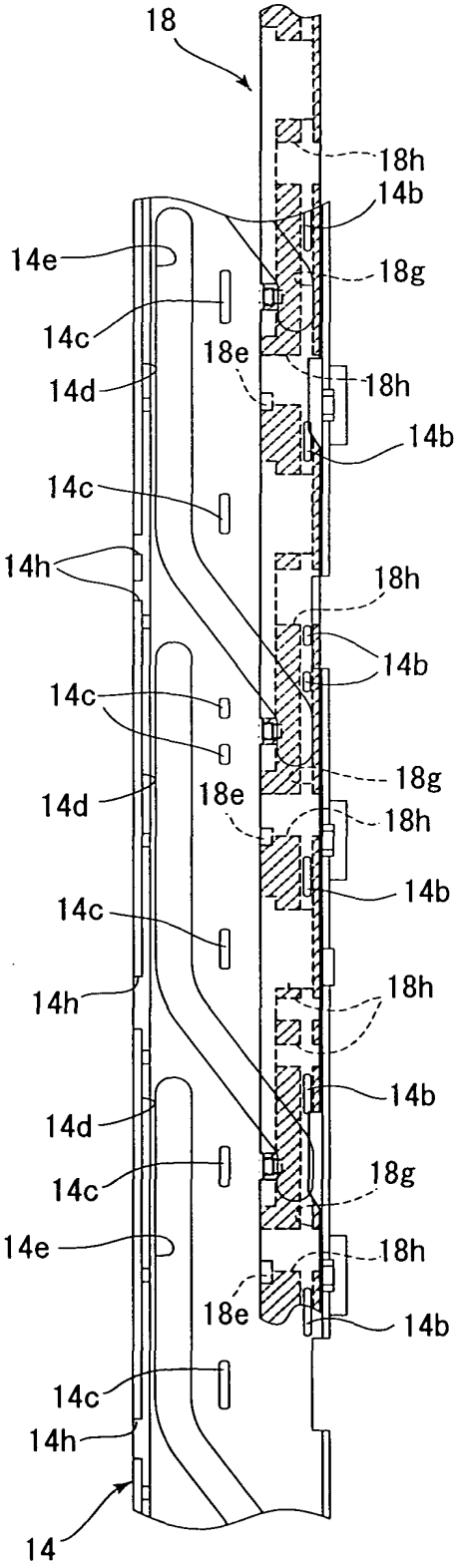

18
18h
14b
14e
18g
14c
18e
14d
18h
14b
14c
14h
18h
14b
14c
18g
14d
18e
18h
14b
14c
14h
18h
14b
14d
14c
18g
14e
18h
18e
14b
14c
14h
14

Fig. 50

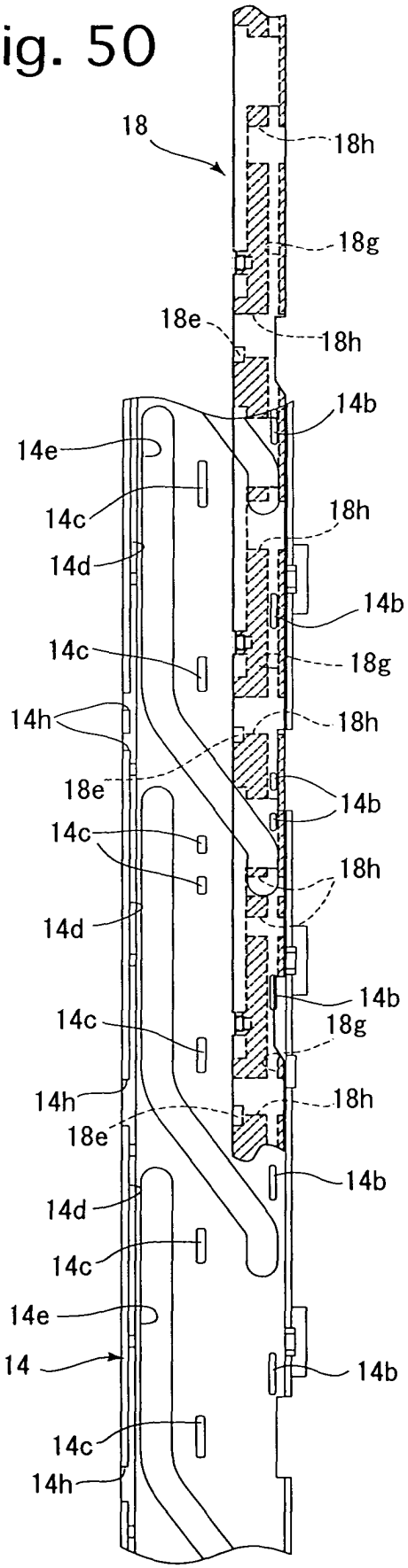

18
18h
18g
18e
18h
14b
14e
14c
18h
14d
14b
14c
18g
14h
18h
18e
14b
14c
18h
14d
14b
14c
18g
14h
18h
18e
14b
14d
14c
14e
14
14b
14c
14h

Fig. 51

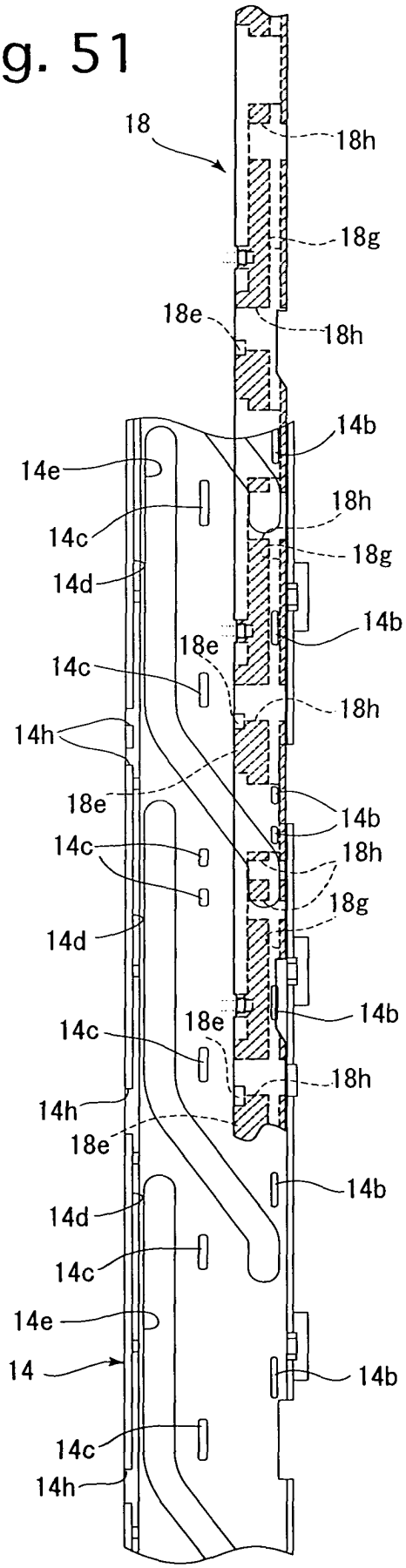

18
18h
18g
18e
18h
14b
14e
18h
14c
18g
14d
14b
18e
14c
18h
14h
14b
18e
14c
18h
18g
14d
14b
14c
18e
18h
14h
18e
14b
14d
14c
14e
14
14b
14c
14h

Fig. 52

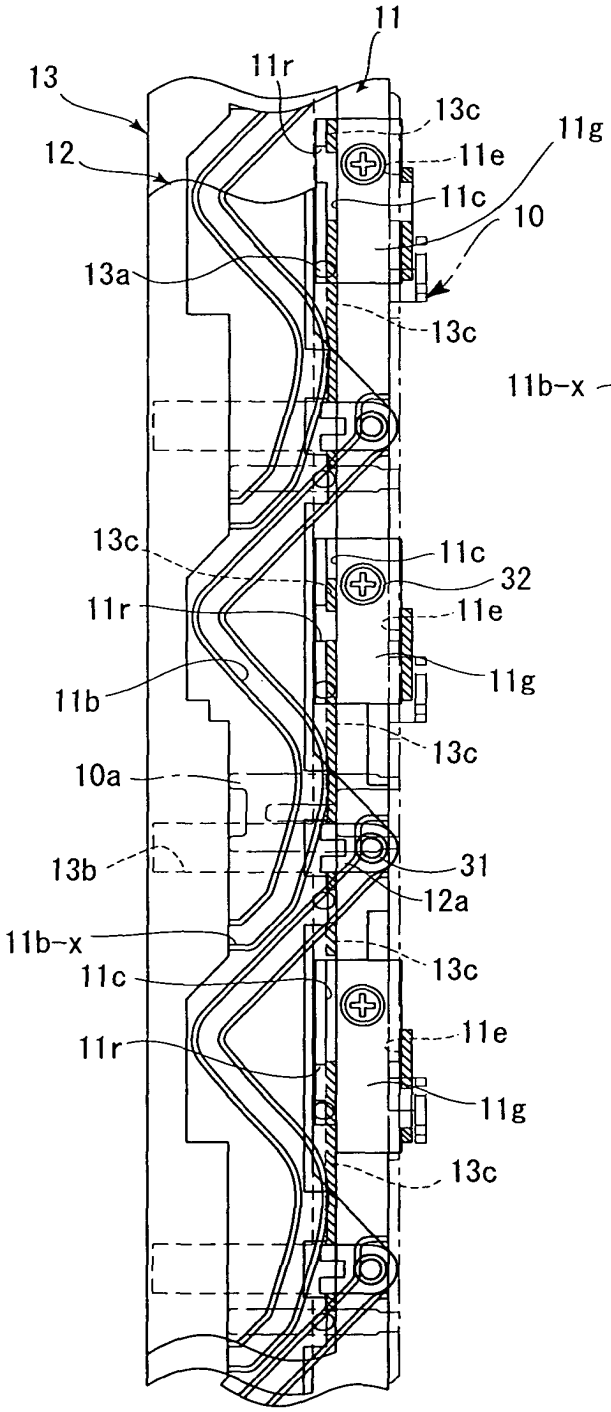

11
11r
13
13c
12
11e
11g
11c
10
13a
13c
13c
11c
32
11r
11e
11g
11b
13c
10a
13b
31
12a
11b-x
13c
11c
11e
11r
11g
13c

Fig. 53

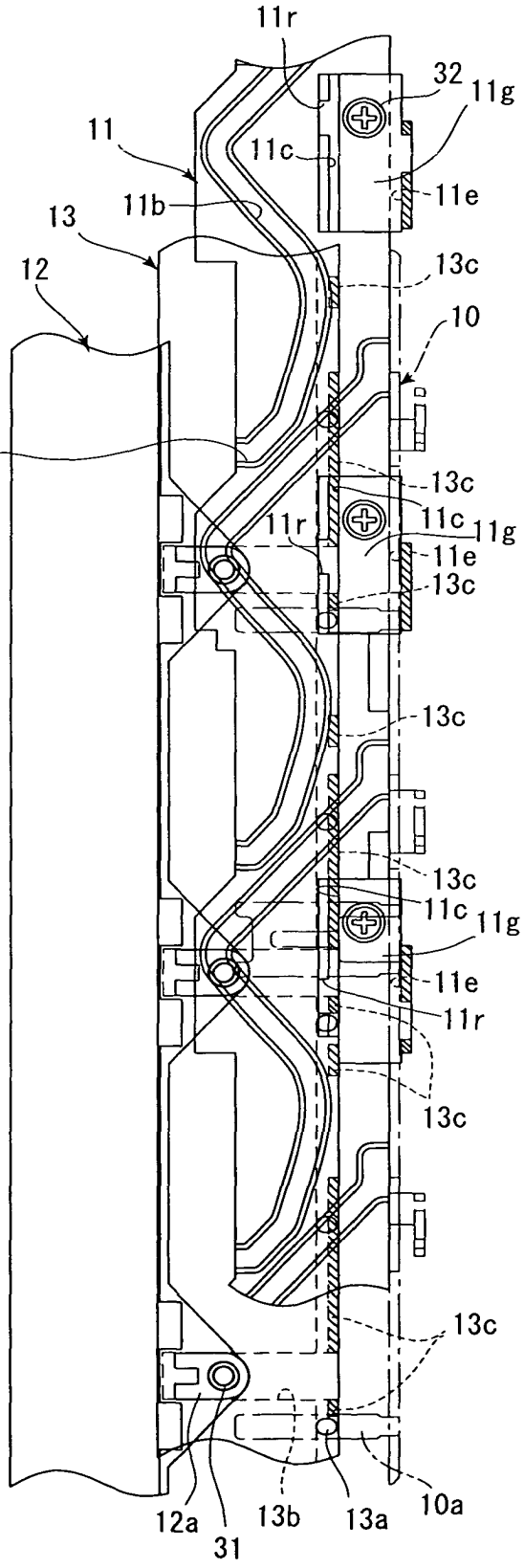

11r
32
11g
11
11c
11e
11b
13
13c
12
10
11b-x
13c
11r
11c
11g
11e
13c
13c
13c
11c
11g
11e
11r
13c
13c
12a
13b
13a
10a
31

Fig. 54

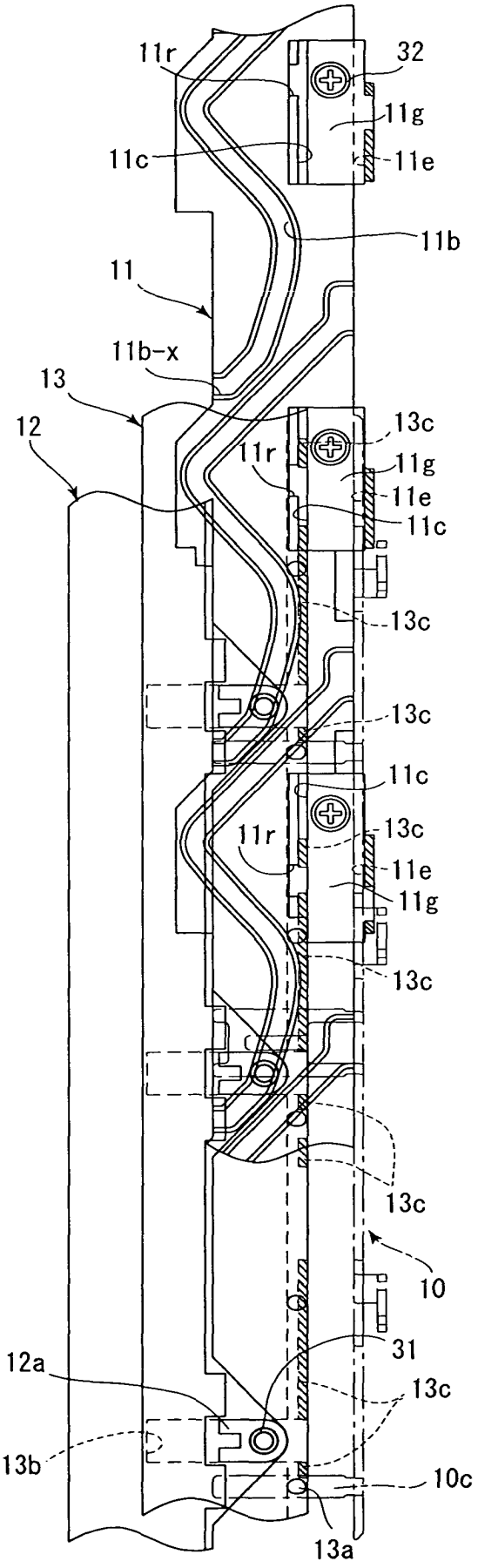

11r
32
11g
11c
11e
11b
11
11b-x
13
12
13c
11r
11g
11e
11c
13c
13c
11c
11r
13c
11e
11g
13c
13c
10
31
12a
13c
13b
10c
13a

Fig. 55

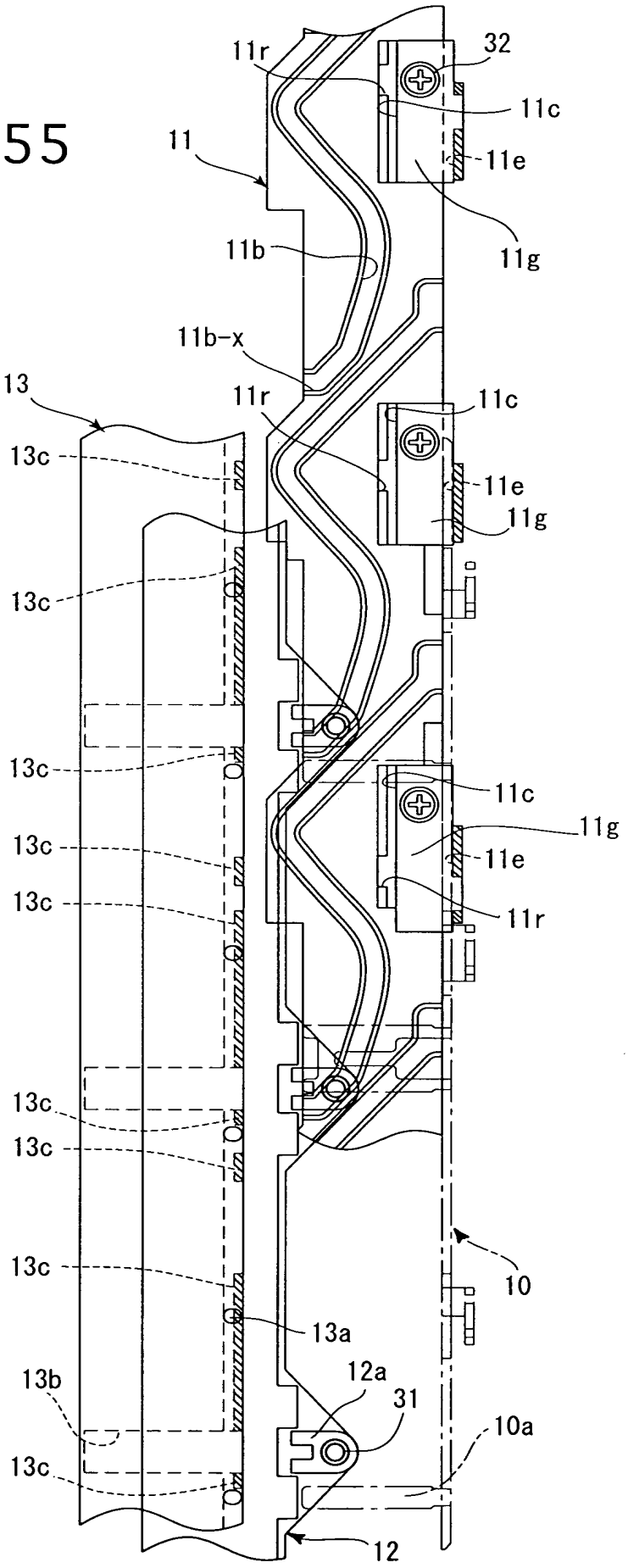

11r
32
11c
11
11e
11g
11b
11b-x
13
11r
11c
13c
11e
11g
13c
13c
11c
11g
13c
11e
13c
11r
13c
13c
13c
10
13a
13b
12a
31
10a
13c
12

Fig. 56

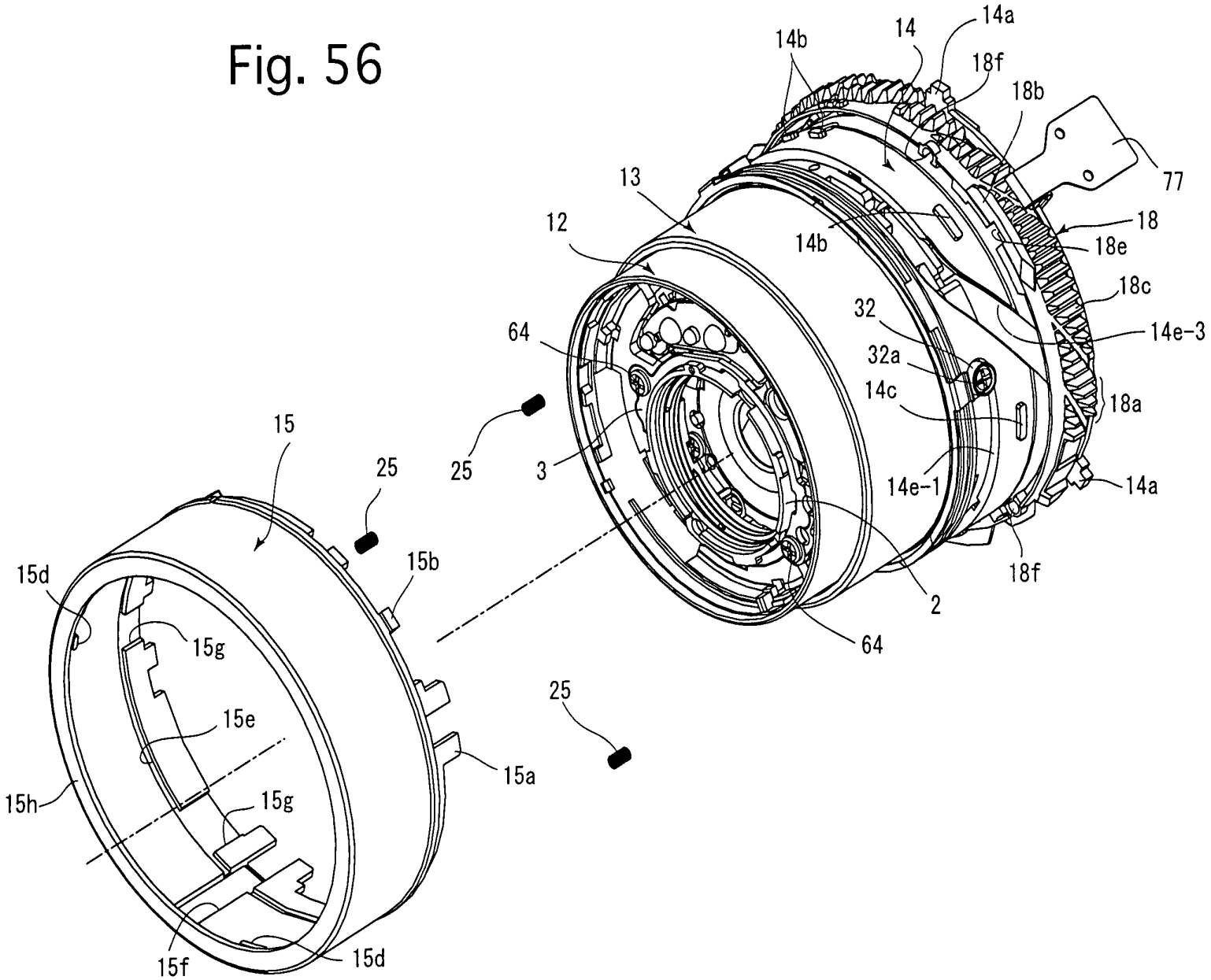

14b
14
14a
18f
18b
77
13
12
14b
18
18e
18c
32
14e-3
64
32a
14c
18a
25
3
15
25
14e-1
14a
15b
15d
18f
2
64
15g
25
15e
15a
15h
15g
15f
15d

Fig. 57

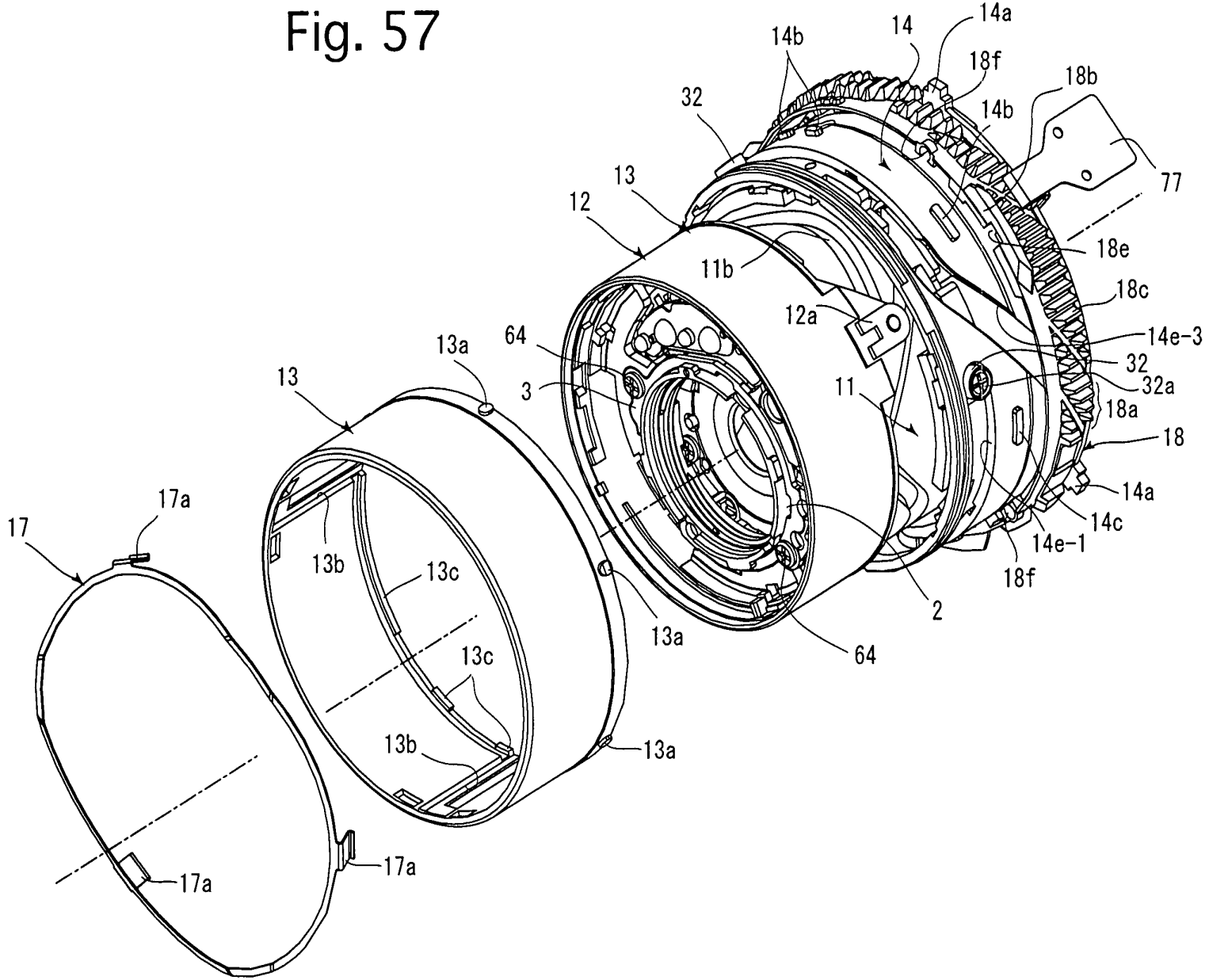

14b
14
14a
18f
18b
32
14b
77
13
12
18e
11b
18c
12a
14e-3
64
13a
32
3
32a
13
11
18a
18
17a
14a
17
14c
13b
13c
14e-1
18f
2
13c
13a
64
13b
13a
17a
17a

Fig. 58

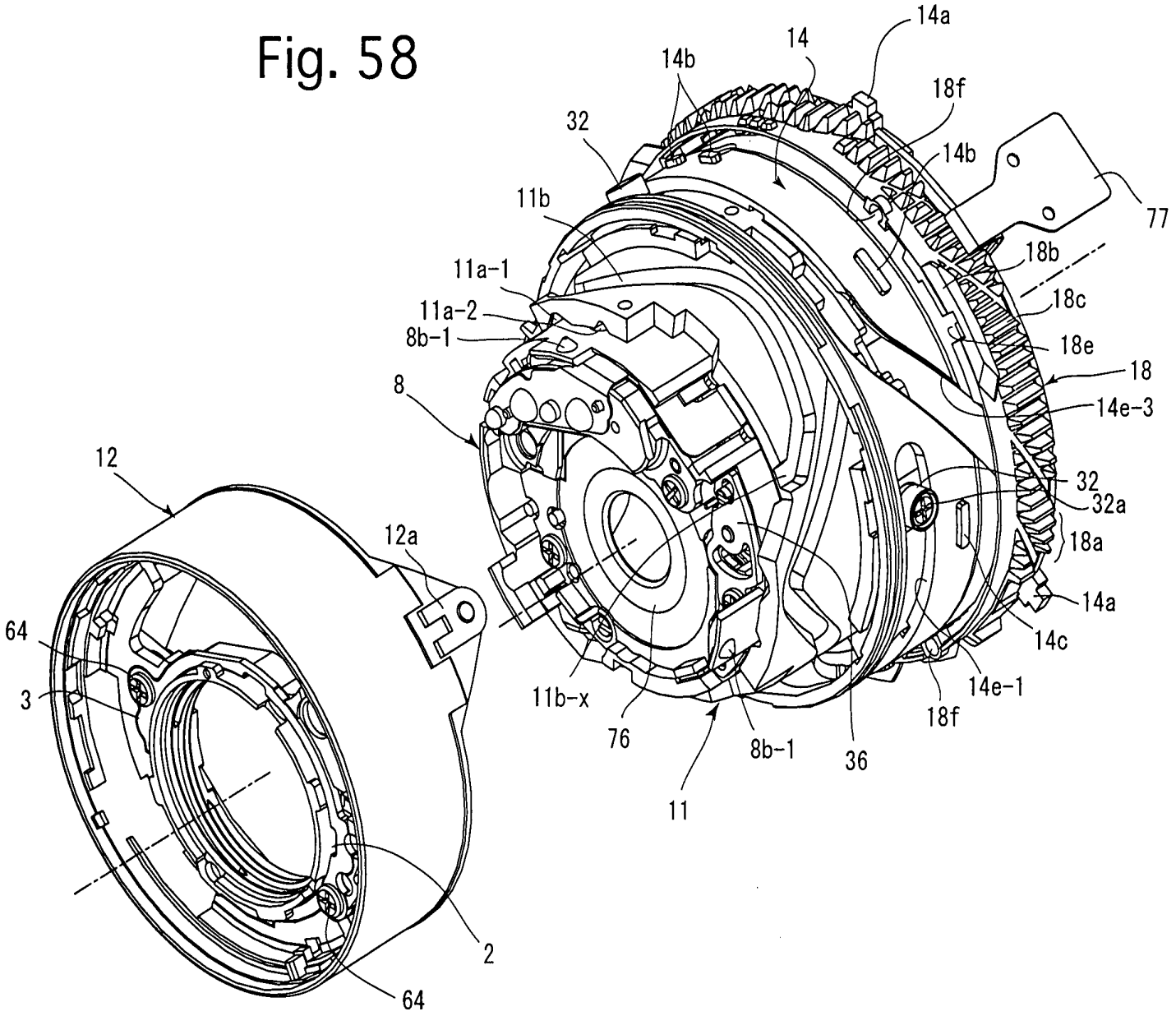

14a
14
14b
18f
32
14b
77
11b
18b
11a-1
18c
11a-2
8b-1
18e
18
8
14e-3
12
32
32a
12a
18a
64
14a
14c
3
11b-x
14e-1
76
18f
8b-1
36
11
2
64

Fig. 59

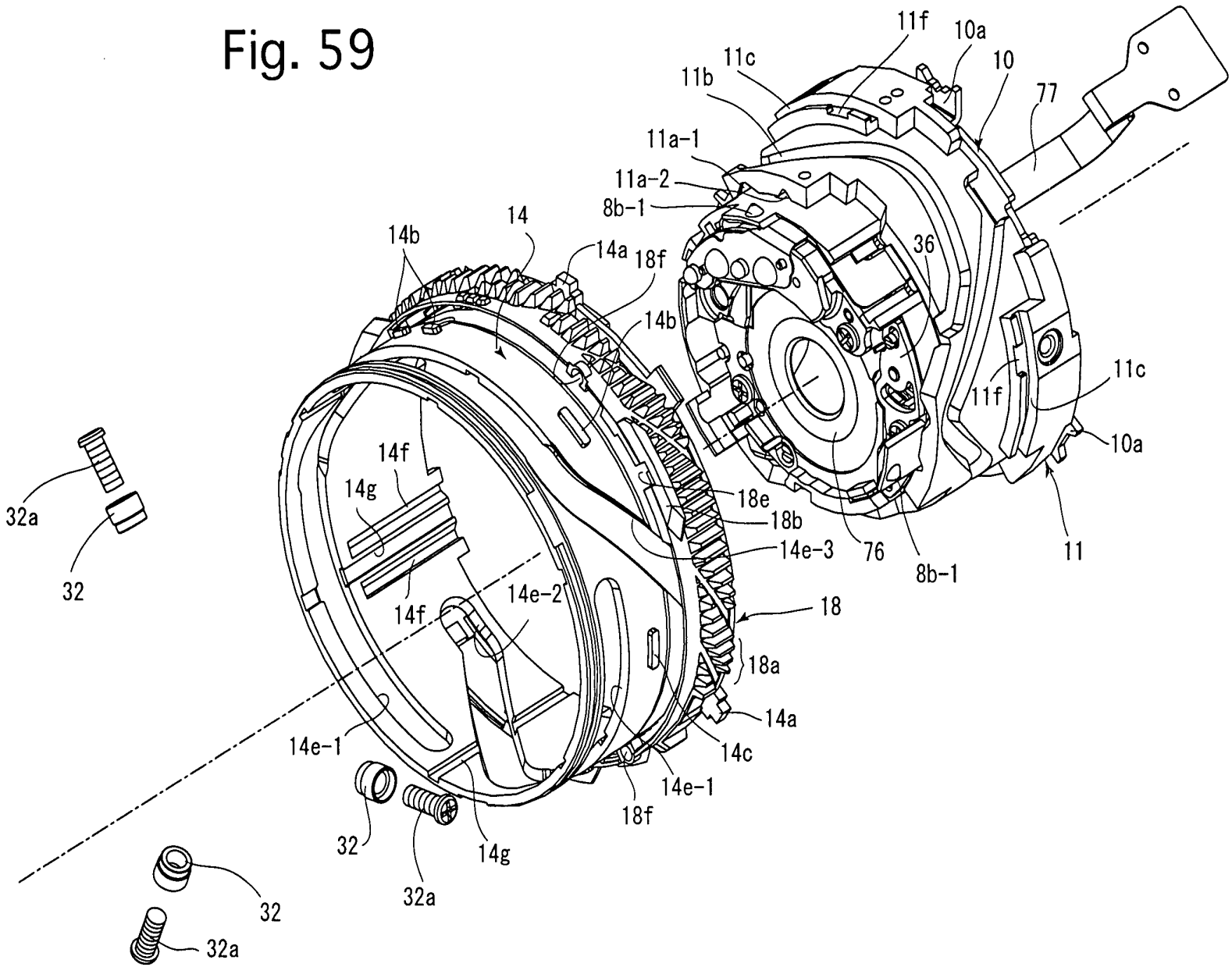

11f
10a
11c
11b
10
77
11a-1
11a-2
8b-1
14
14b
14a
18f
36
14b
11c
11f
10a
14f
14g
18e
18b
14e-3
76
8b-1
11
32a
32
14f
14e-2
18
18a
14a
14e-1
14c
14e-1
18f
32
14g
32a
32
32a

Fig. 60

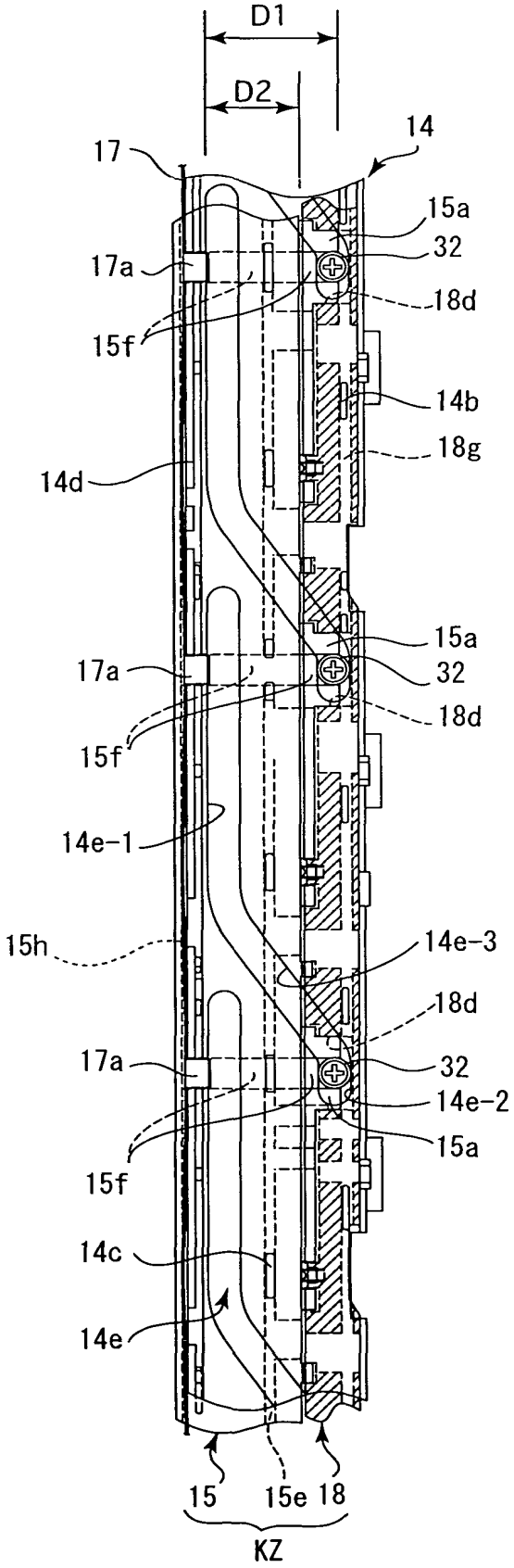
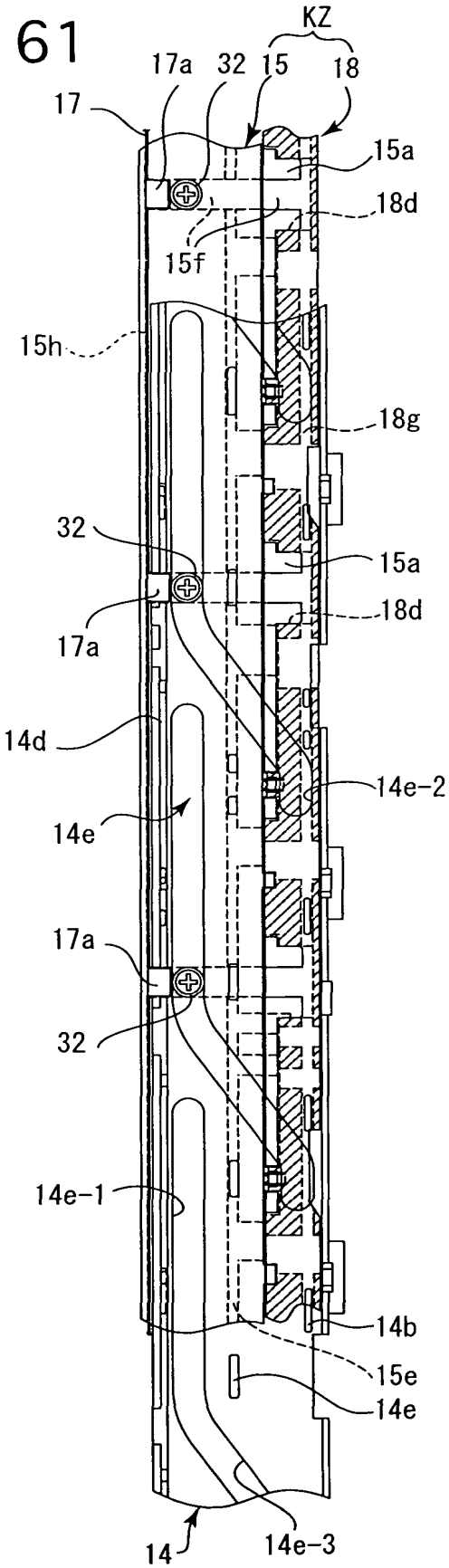

D1
D2
14
17
15a
32
17a
18d
15f
14b
18g
14d
15a
17a
32
18d
15f
14e-1
15h
14e-3
18d
17a
32
14e-2
15a
15f
14c
14e
15
15e
18
KZ

Fig. 61


KZ
17a
32
15
18
17
15a
18d
15f
15h
18g
32
15a
18d
17a
14d
14e-2
14e
17a
32
14e-1
14b
15e
14e
14
14e-3

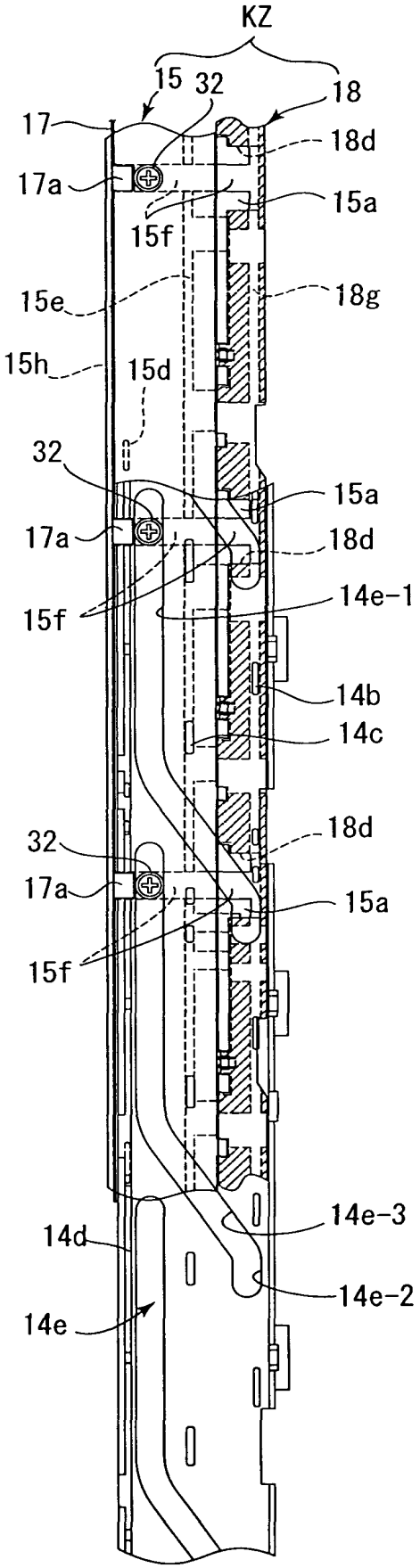

KZ
15
32
18
17
18d
17a
15a
15f
15e
18g
15h
15d
32
15a
17a
18d
15f
14e-1
14b
14c
32
18d
17a
15a
15f
14e-3
14d
14e-2
14e

Fig. 62

Fig. 63

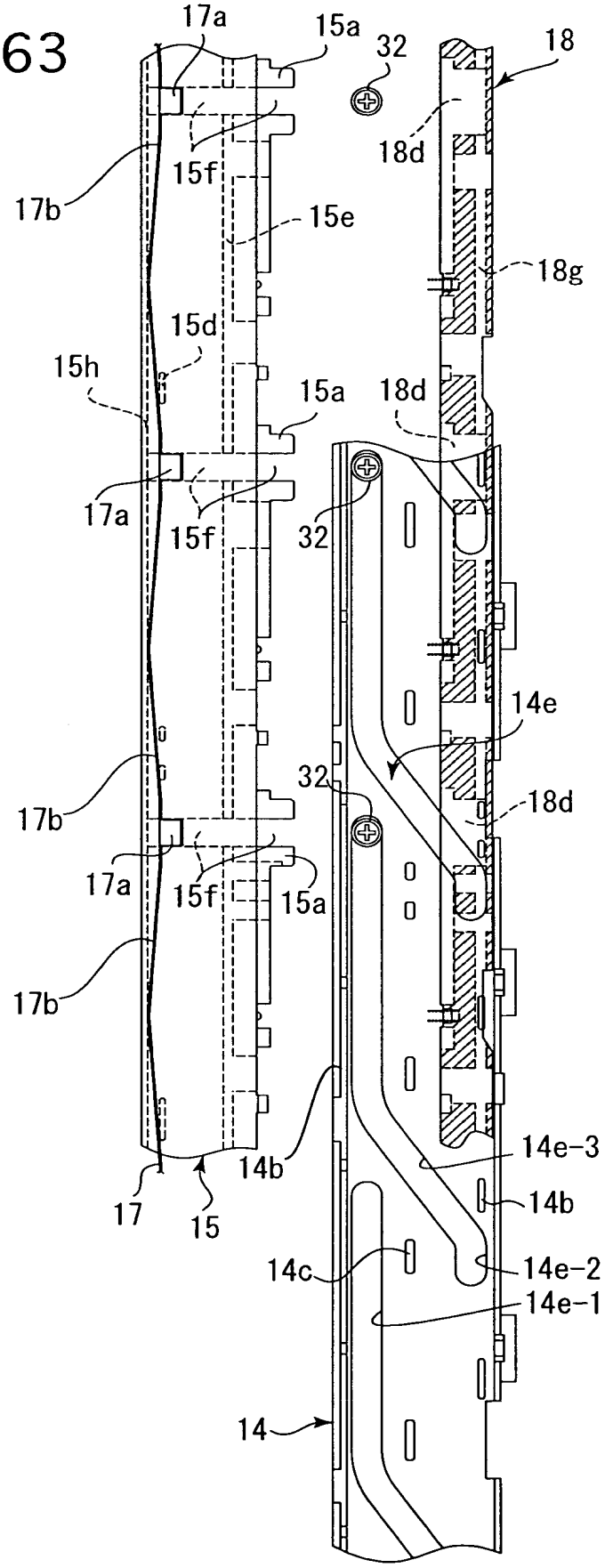

17a
15a
32
18
18d
15f
17b
15e
18g
15d
15h
15a
18d
17a
15f
32
14e
32
18d
17b
17a
15f
15a
17b
14e-3
14b
14b
17
15
14c
14e-2
14e-1
14

Fig. 64

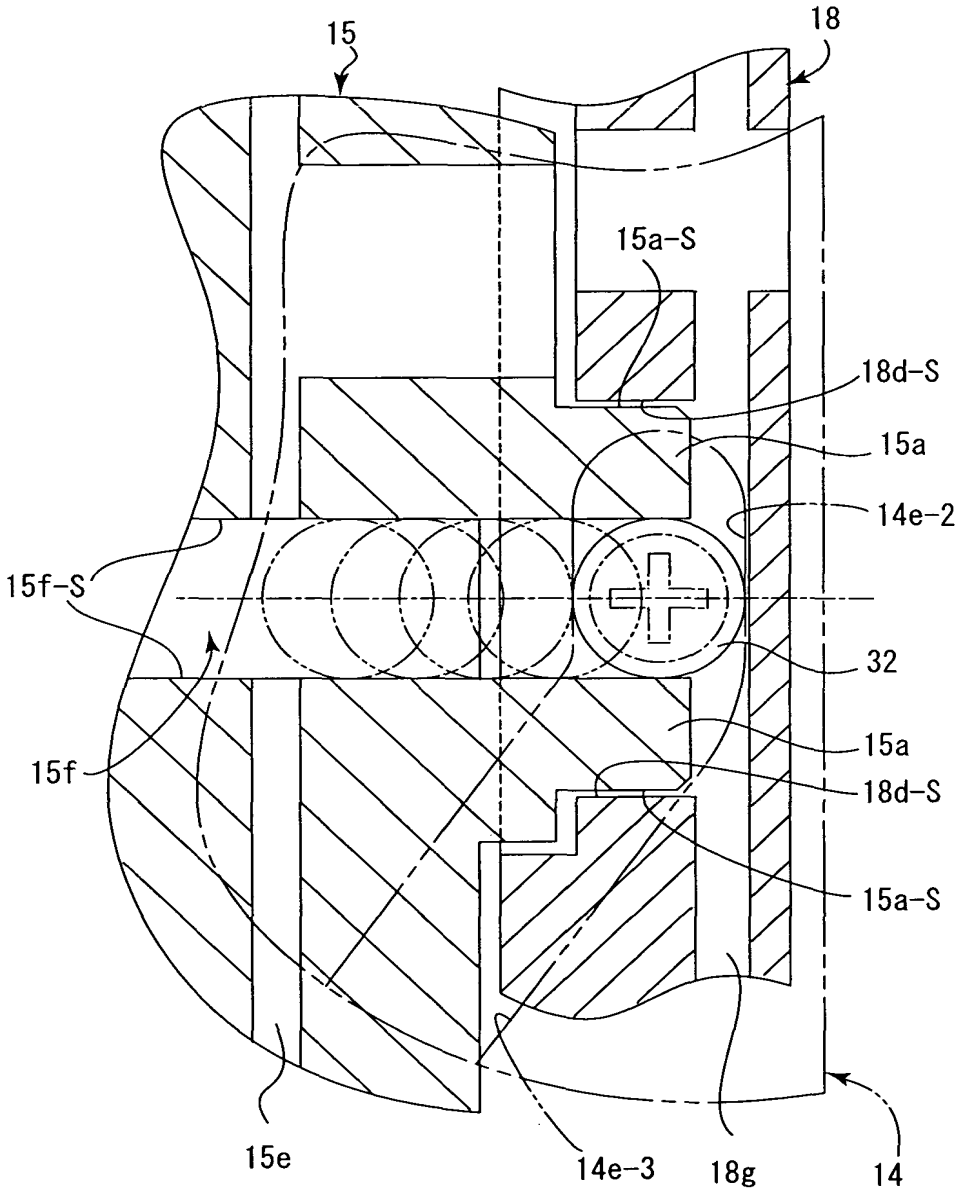

15
18
15a-S
18d-S
15a
14e-2
15f-S
32
15a
15f
18d-S
15a-S
15e
14e-3
18g
14

Fig. 65

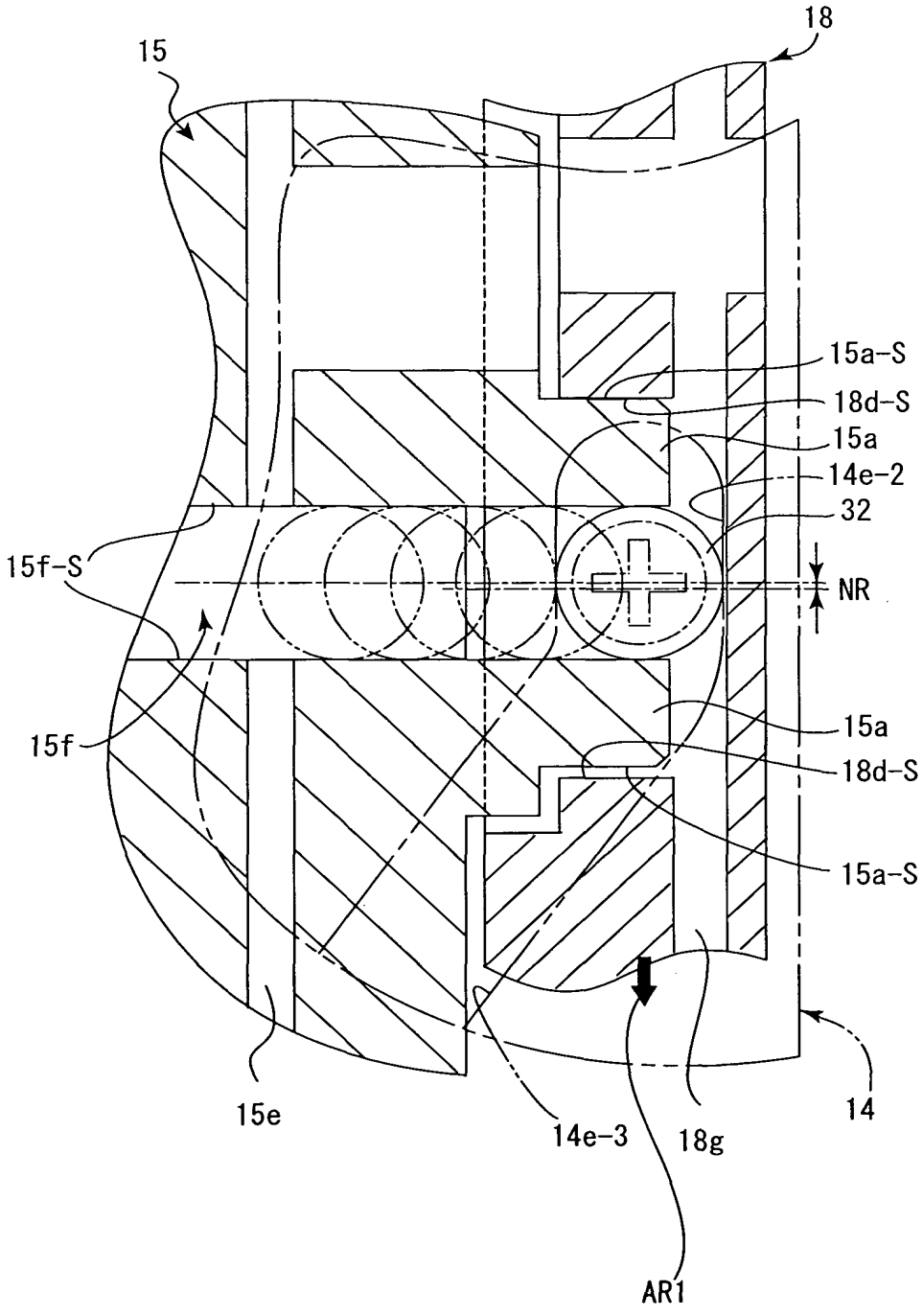

18
15
15a-S
18d-S
15a
14e-2
32
15f-S
NR
15a
15f
18d-S
15a-S
15e
14e-3
18g
14
AR1

Fig. 66

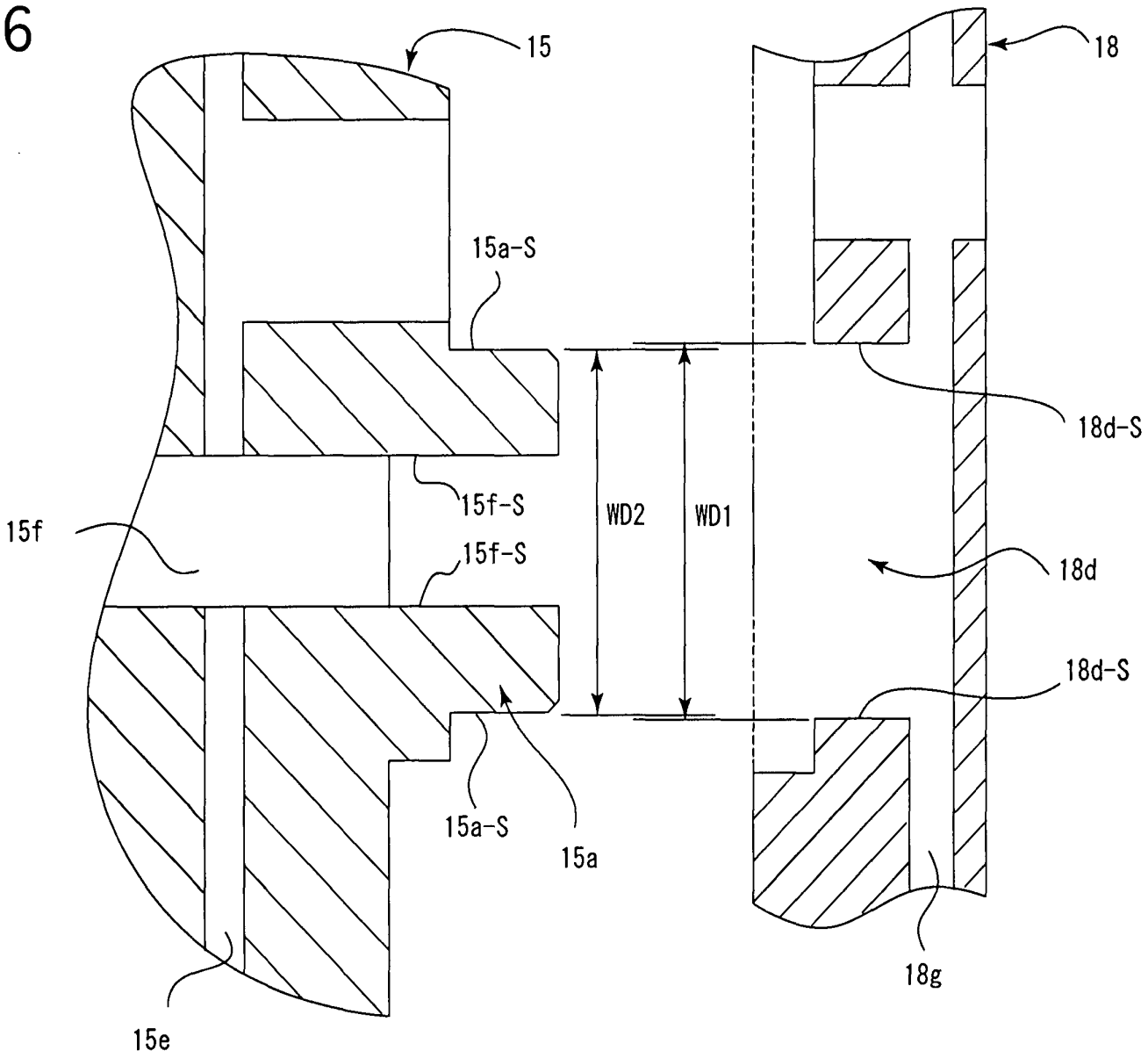


Fig. 67

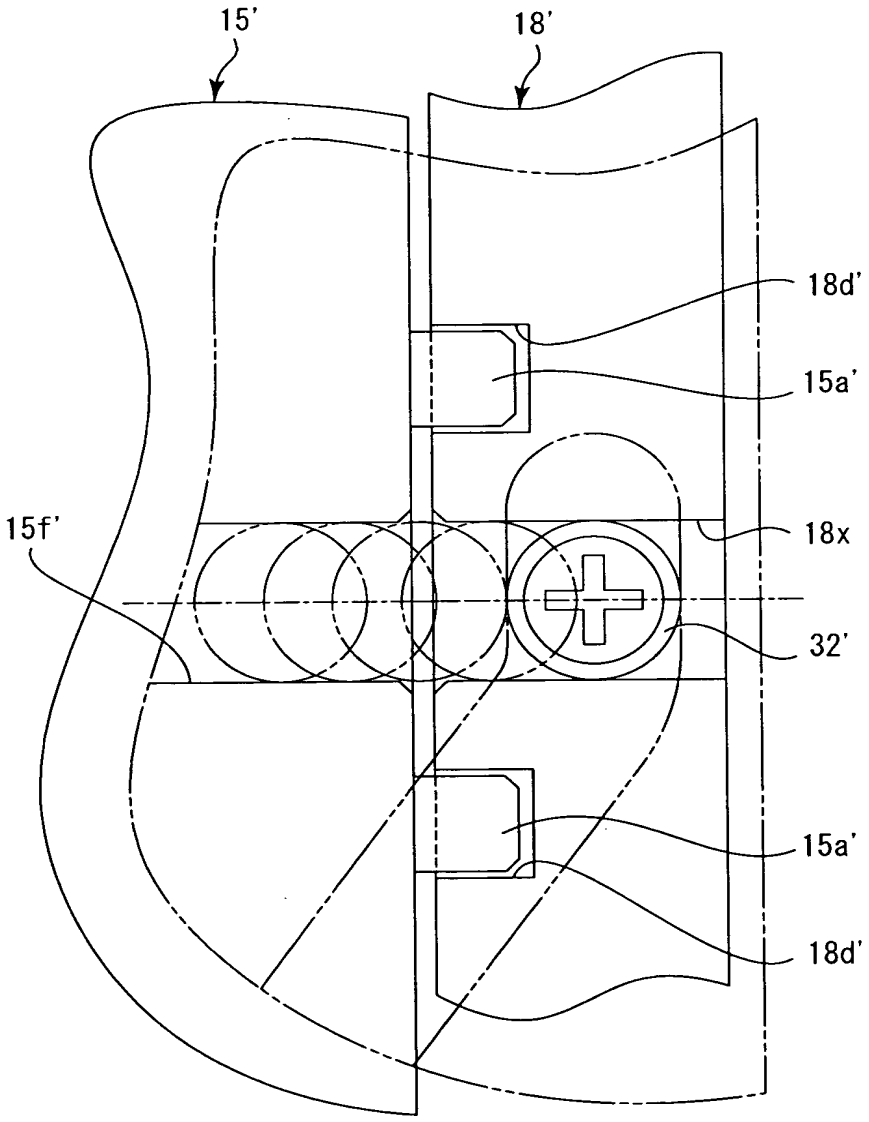


Fig. 68

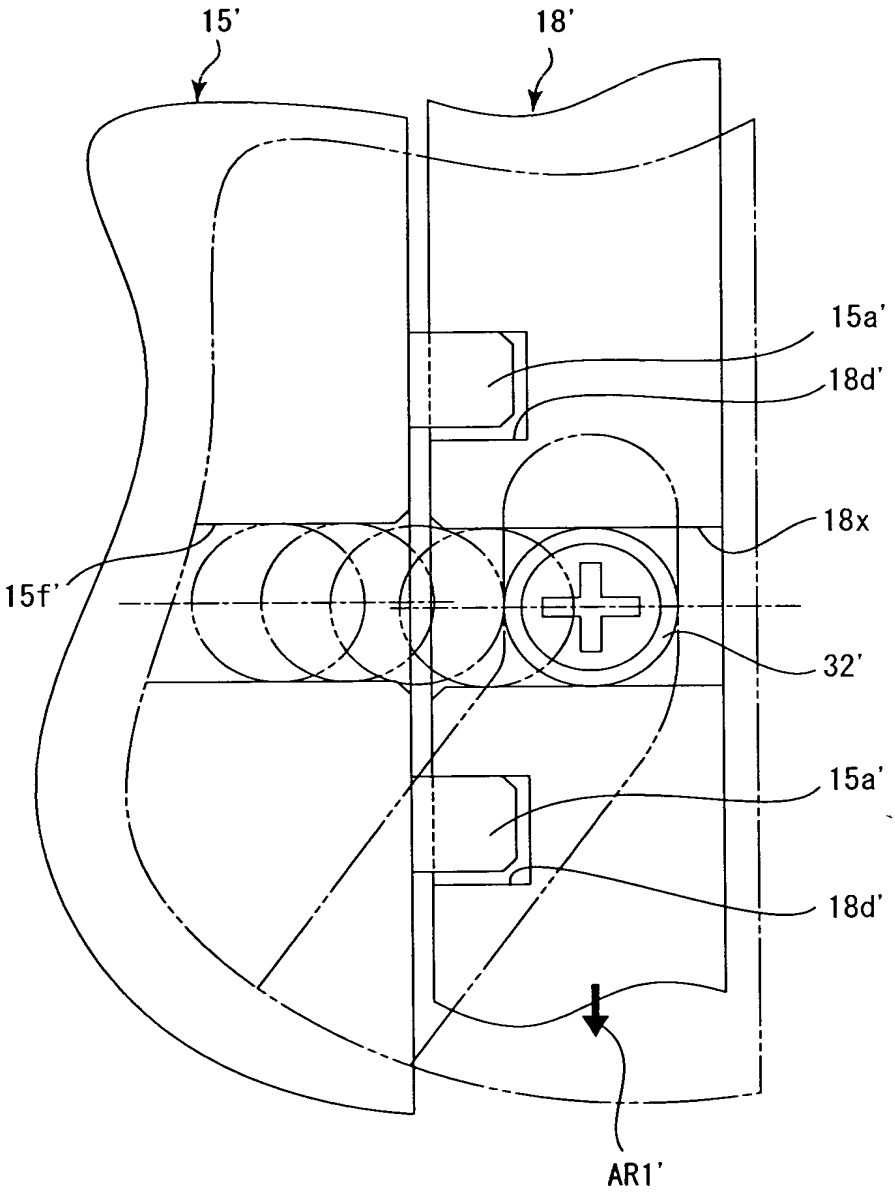


Fig. 69

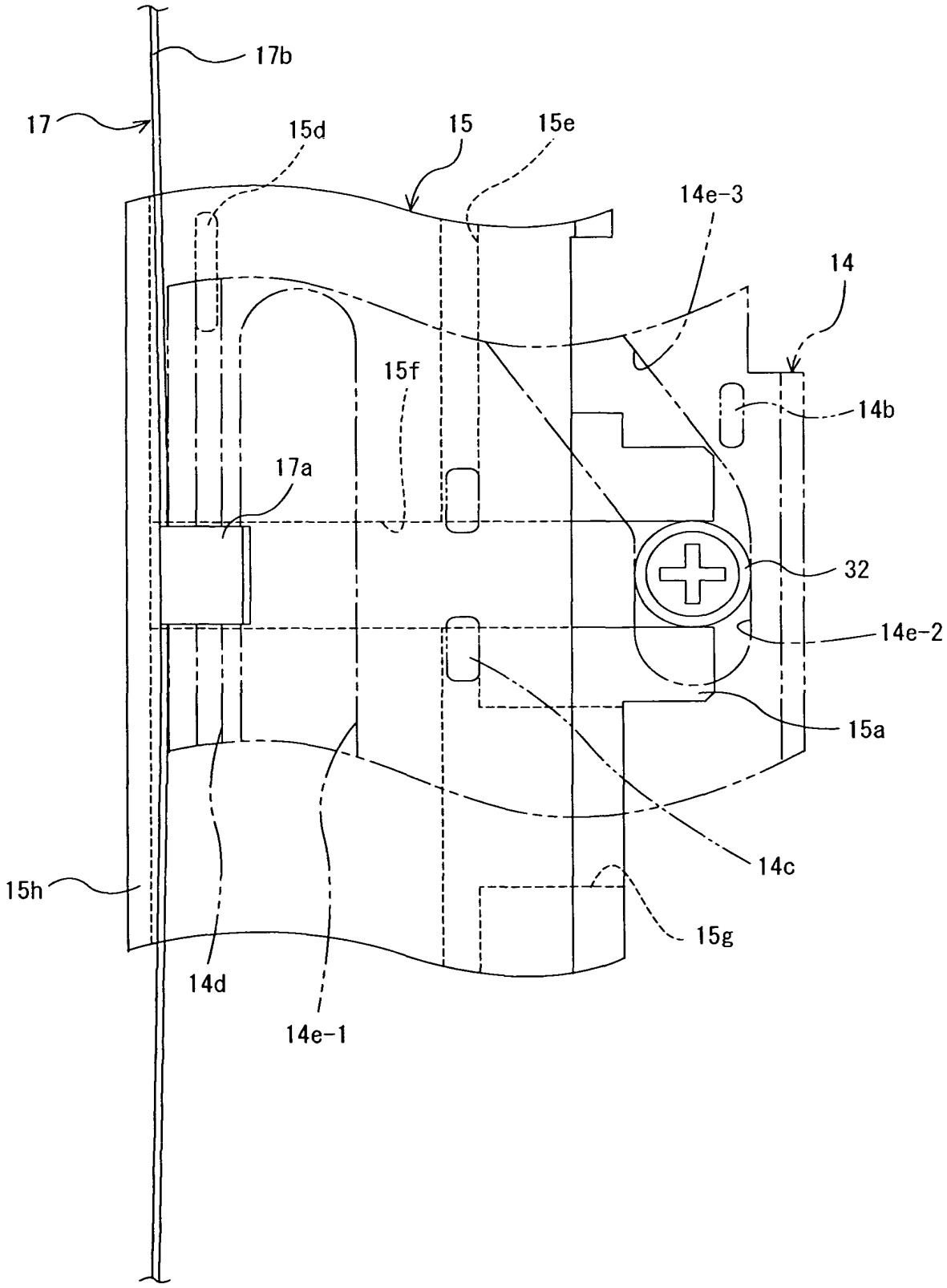

17b
17
15d
15
15e
14e-3
14
15f
14b
17a
32
14e-2
15a
14c
15h
15g
14d
14e-1

Fig. 70

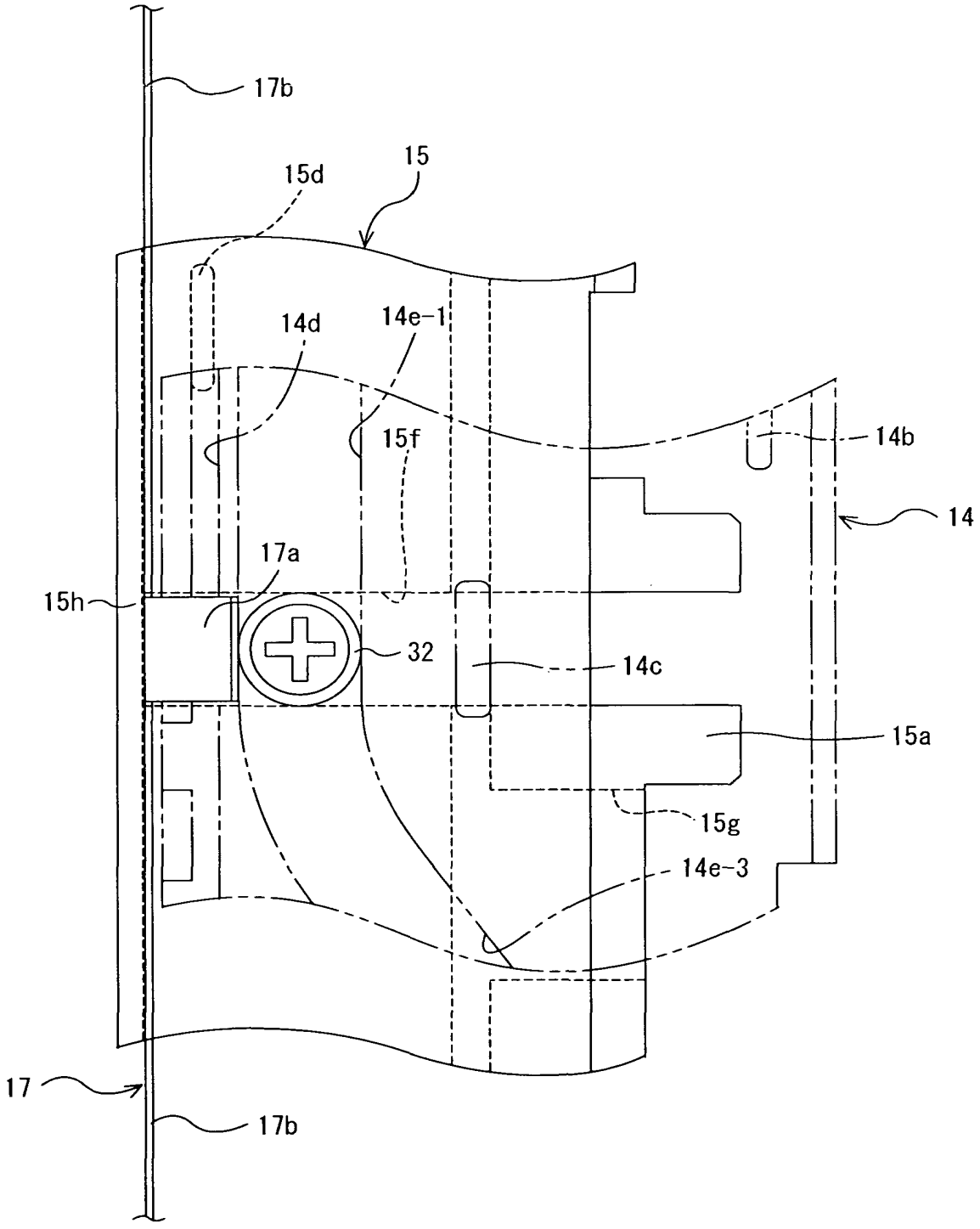


Fig. 71

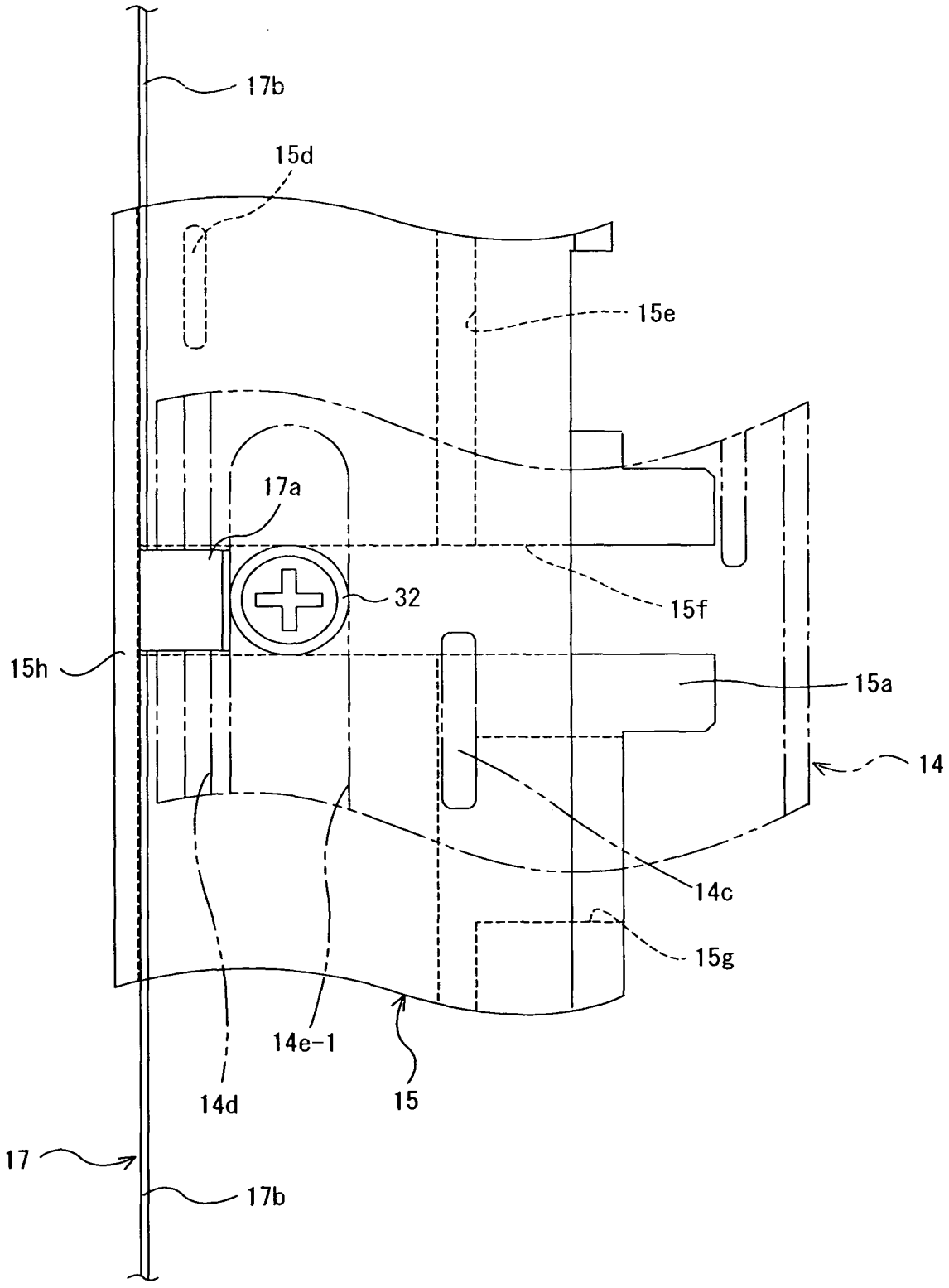


Fig. 72

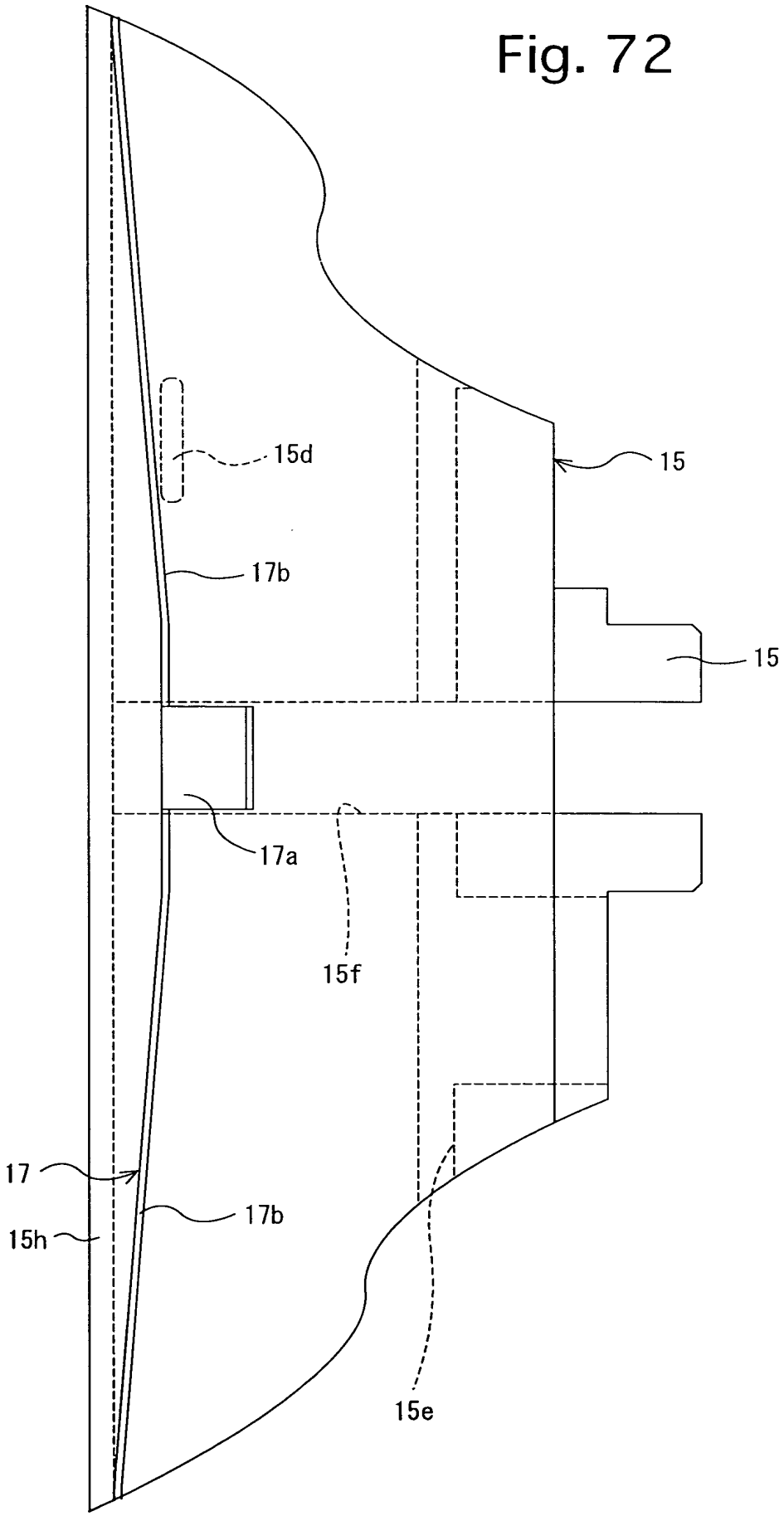


Fig. 73

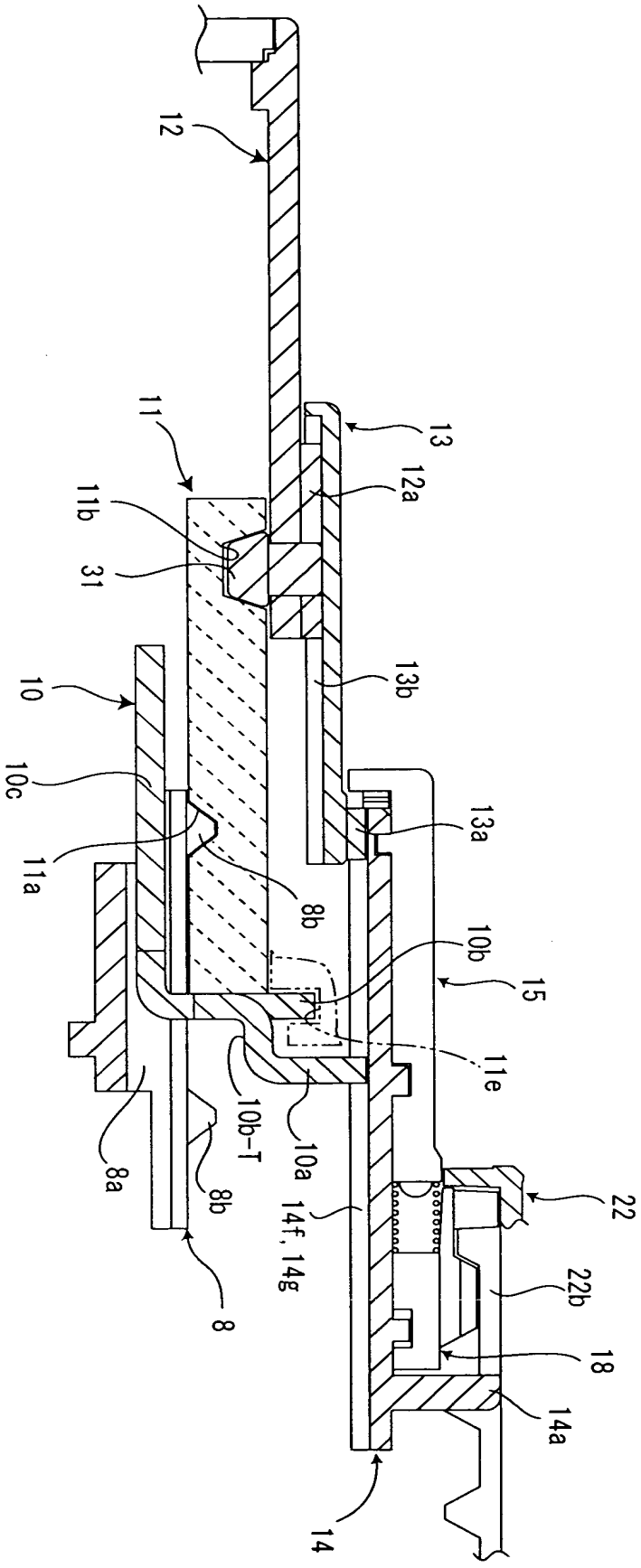

12
11
13
12a
11b
31
10
10c
11a
13b
13a
8b
10b
15
11e
10b-T
10a
14f, 14g
8a
8b
8
14
22
22b
18
14a

Fig. 74

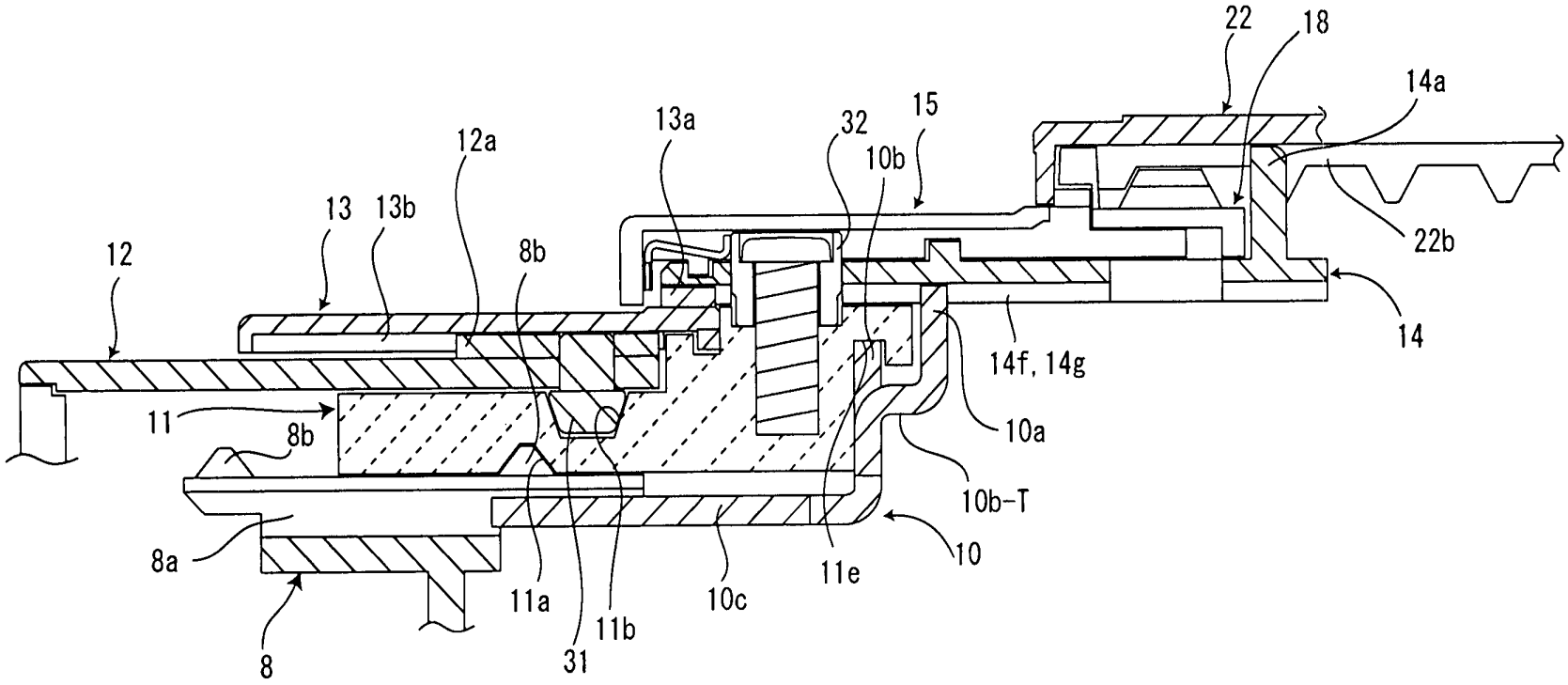

22
18
14a
15
32
10b
13a
12a
13
13b
8b
12
22b
14
14f, 14g
11
8b
10a
10b-T
8a
10
11e
11a
11b
10c
31
8

Fig. 75

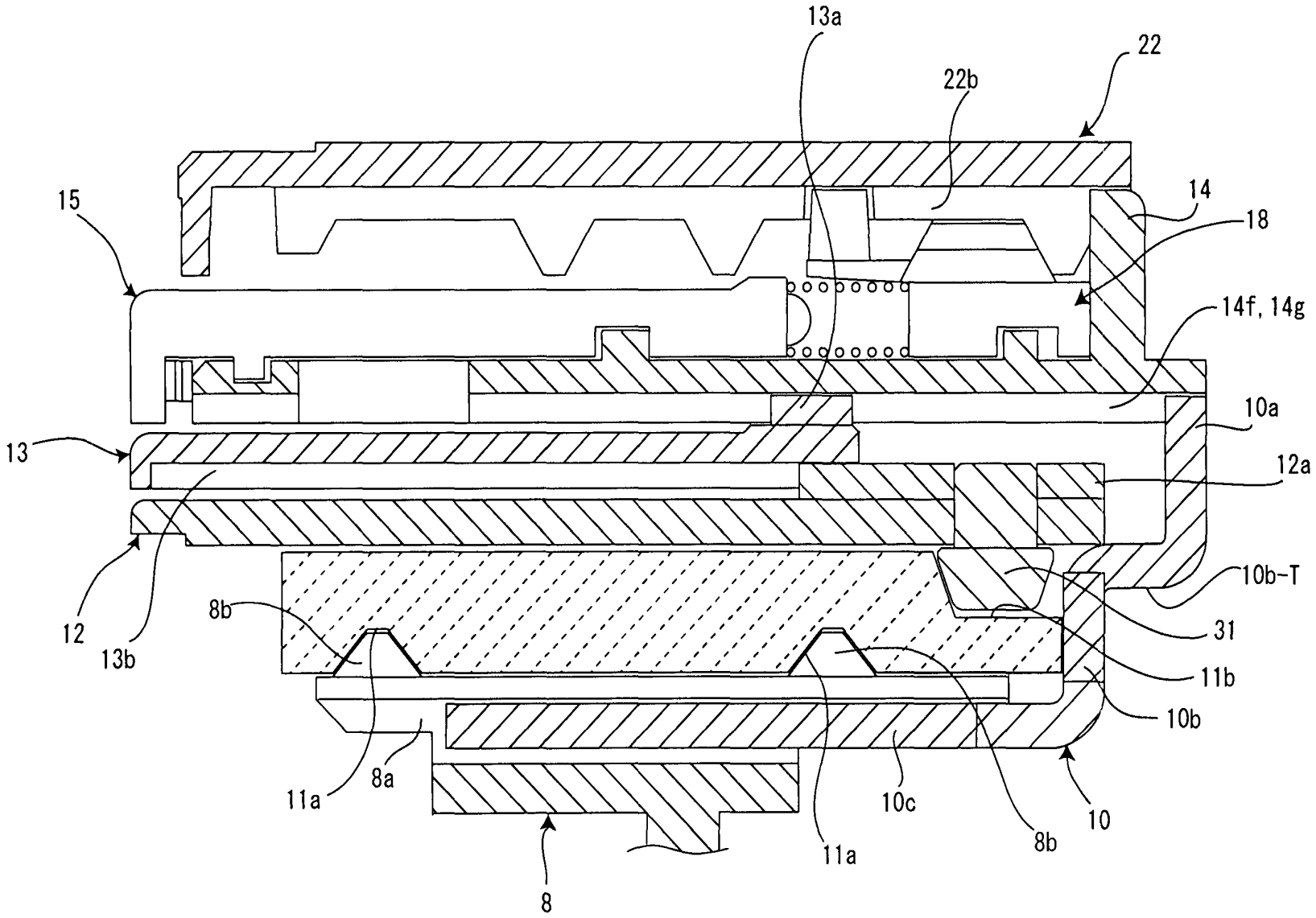

13a
22
22b
15
14
18
14f, 14g
10a
13
12a
10b-T
12
13b
8b
31
11b
10b
11a
8a
10c
10
8b
11a
8

Fig. 76

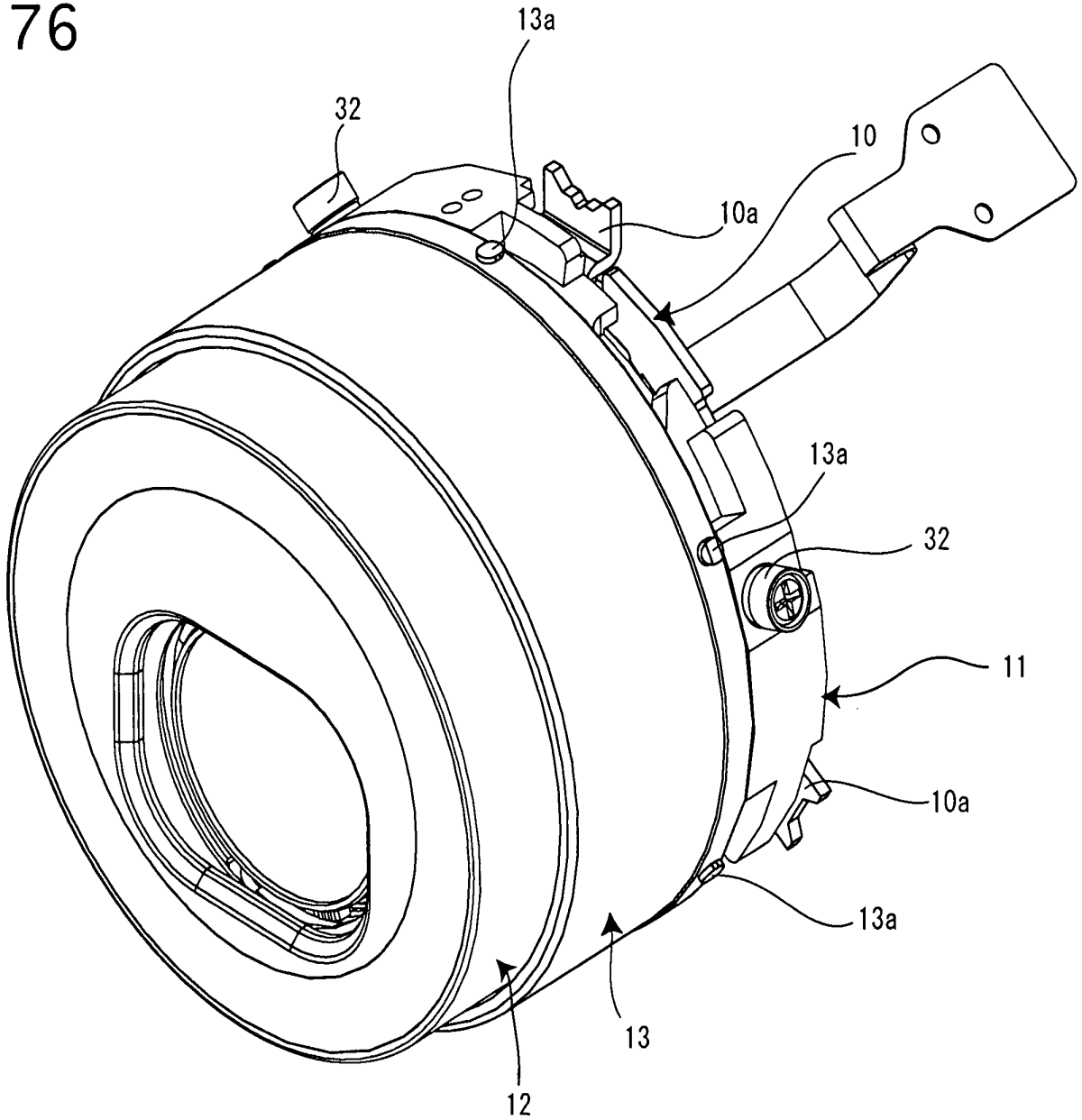


Fig. 77

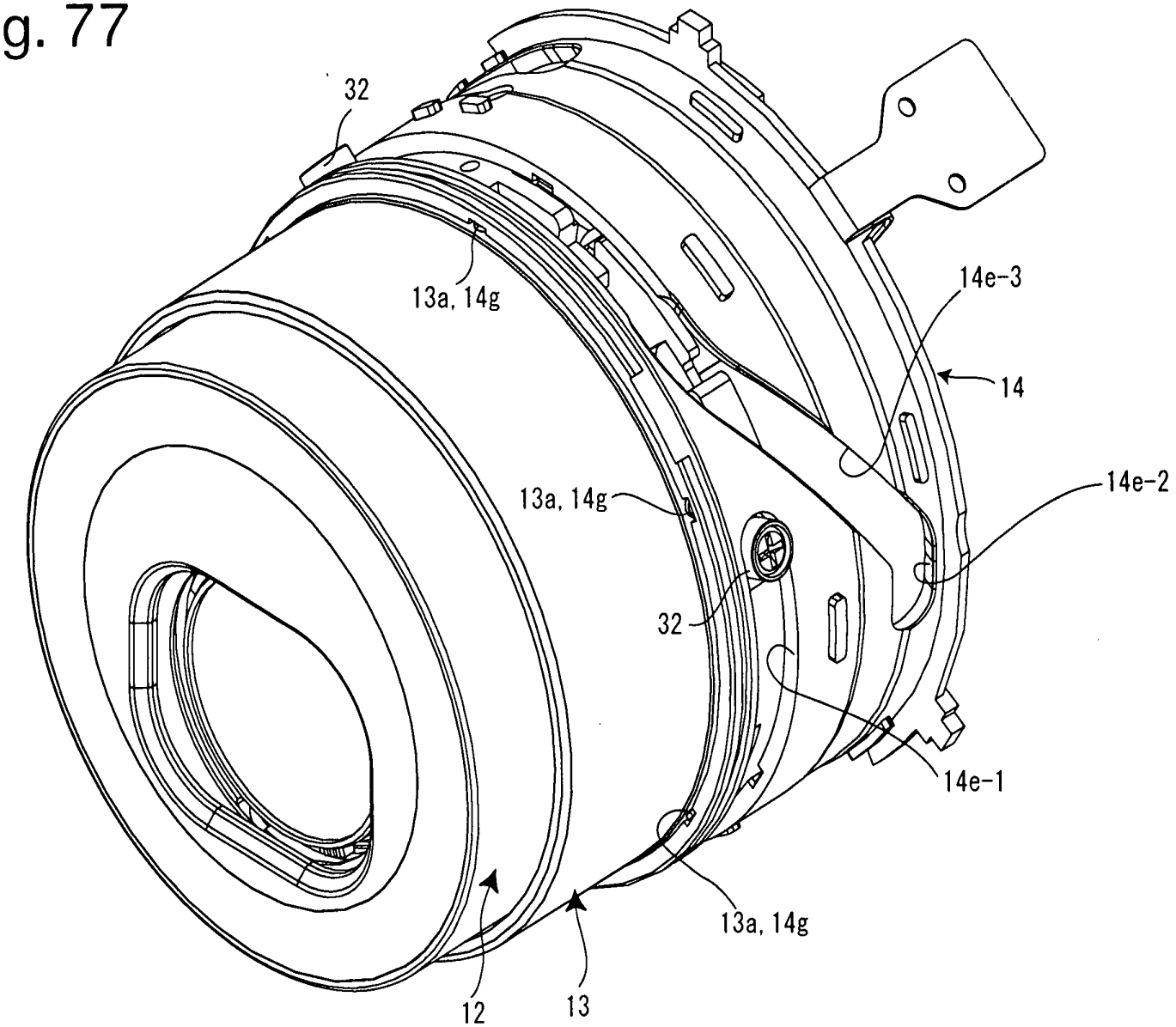


Fig. 78

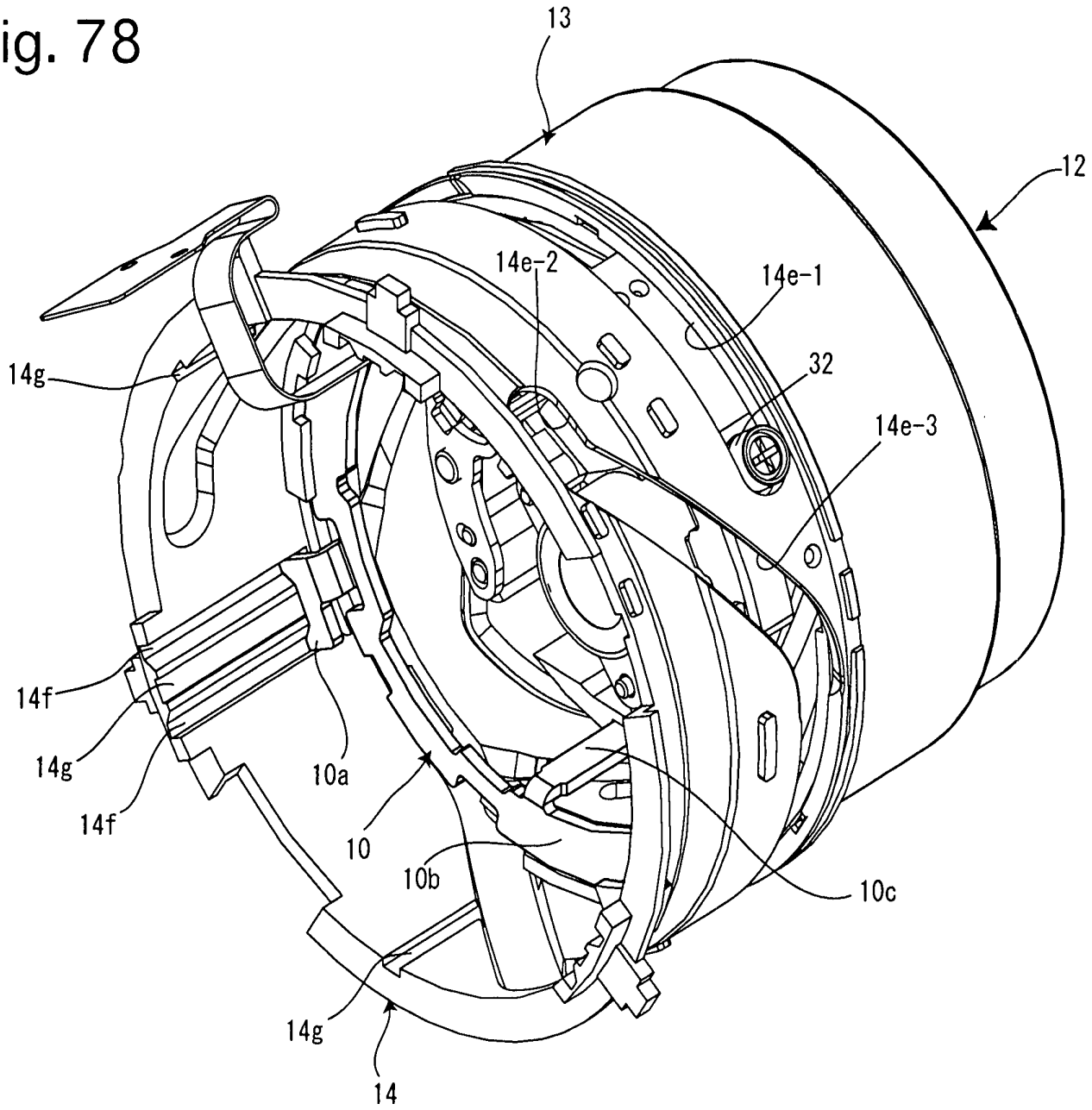


Fig . 79

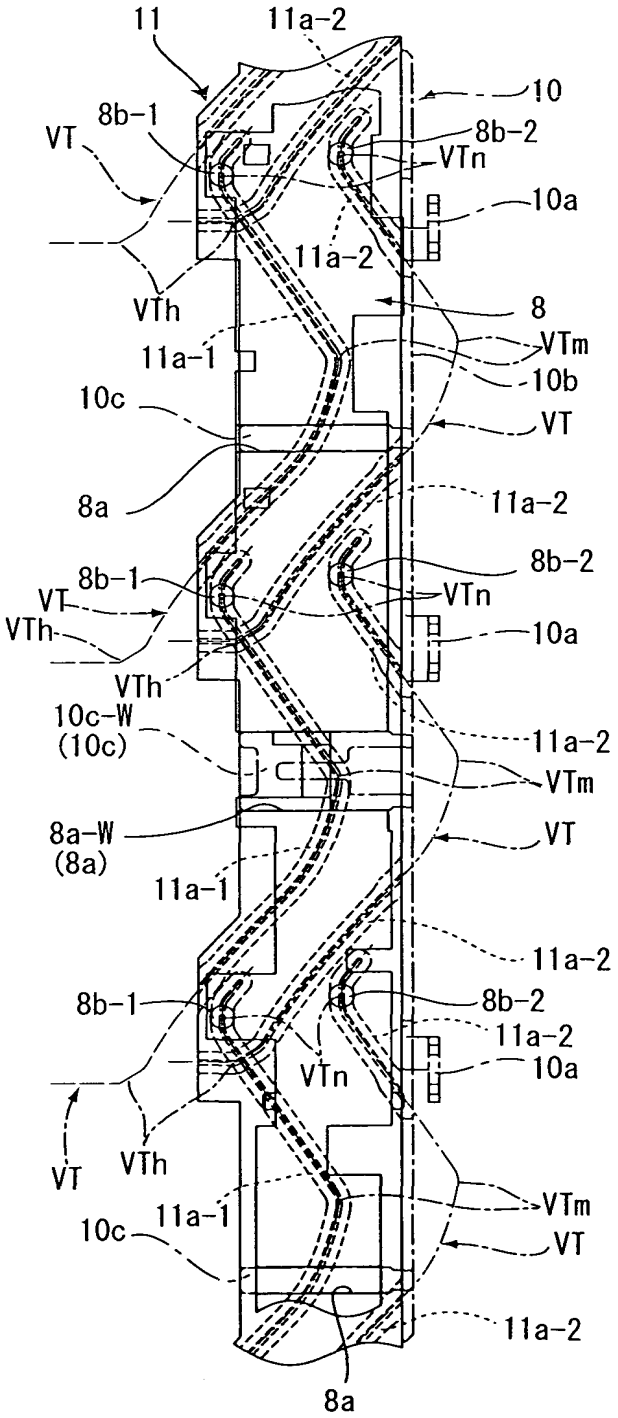

11
11a-2
10
8b-1
8b-2
VT
VTn
10a
11a-2
VTh
8
VTm
11a-1
10b
10c
VT
8a
11a-2
8b-2
8b-1
VT
VTn
VTh
10a
VTh
10c-W
(10c)
11a-2
VTm
8a-W
(8a)
VT
11a-1
11a-2
8b-1
8b-2
11a-2
VTn
10a
VT
VTh
VTm
11a-1
VT
10c
11a-2
8a

Fig . 80

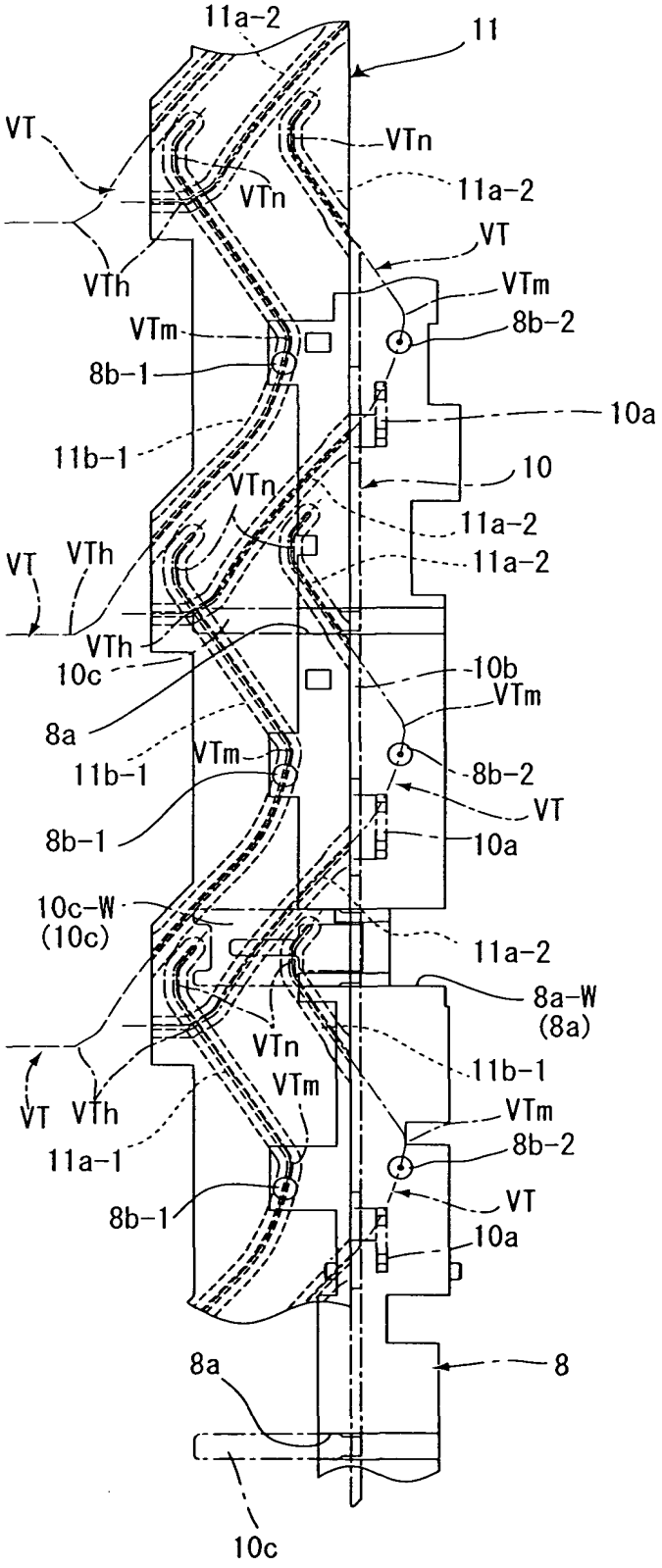

11a-2
11
VT
VTn
VTn
11a-2
VT
VTh
VTm
VTm
8b-2
8b-1
10a
11b-1
10
VTn
11a-2
VT
VTh
11a-2
VTh
10c
10b
VTm
8a
VTm
11b-1
8b-2
VT
8b-1
10a
10c-W
(10c)
11a-2
8a-W
(8a)
VTn
11b-1
VT
VTh
VTm
VTm
11a-1
8b-2
8b-1
VT
10a
8
8a
10c

Fig . 81

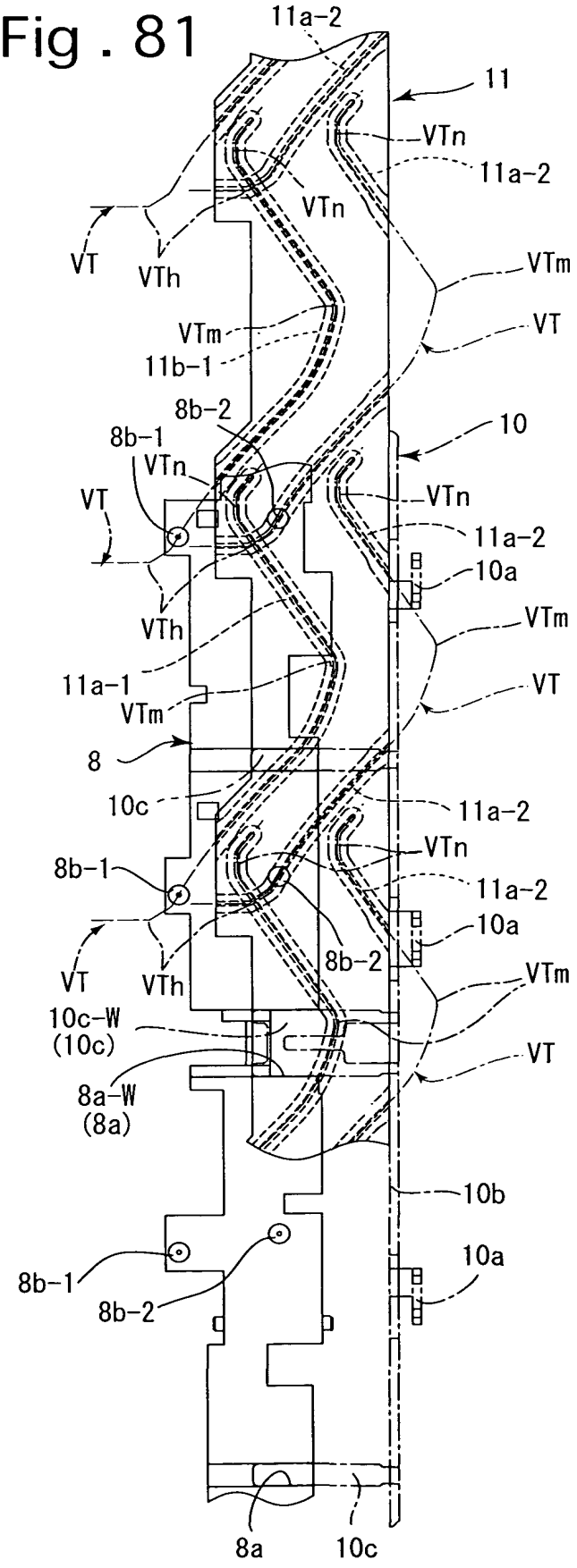

11a-2
11
VTn
11a-2
VTn
VT
VTh
VTm
VT
VTm
11b-1
8b-2
10
8b-1
VTn
VTn
VT
11a-2
10a
VTh
VTm
11a-1
VTm
VT
8
10c
11a-2
VTn
8b-1
11a-2
10a
8b-2
VT
VTh
VTm
10c-W
(10c)
VT
8a-W
(8a)
10b
10a
8b-1
8b-2
8a
10c

Fig . 82

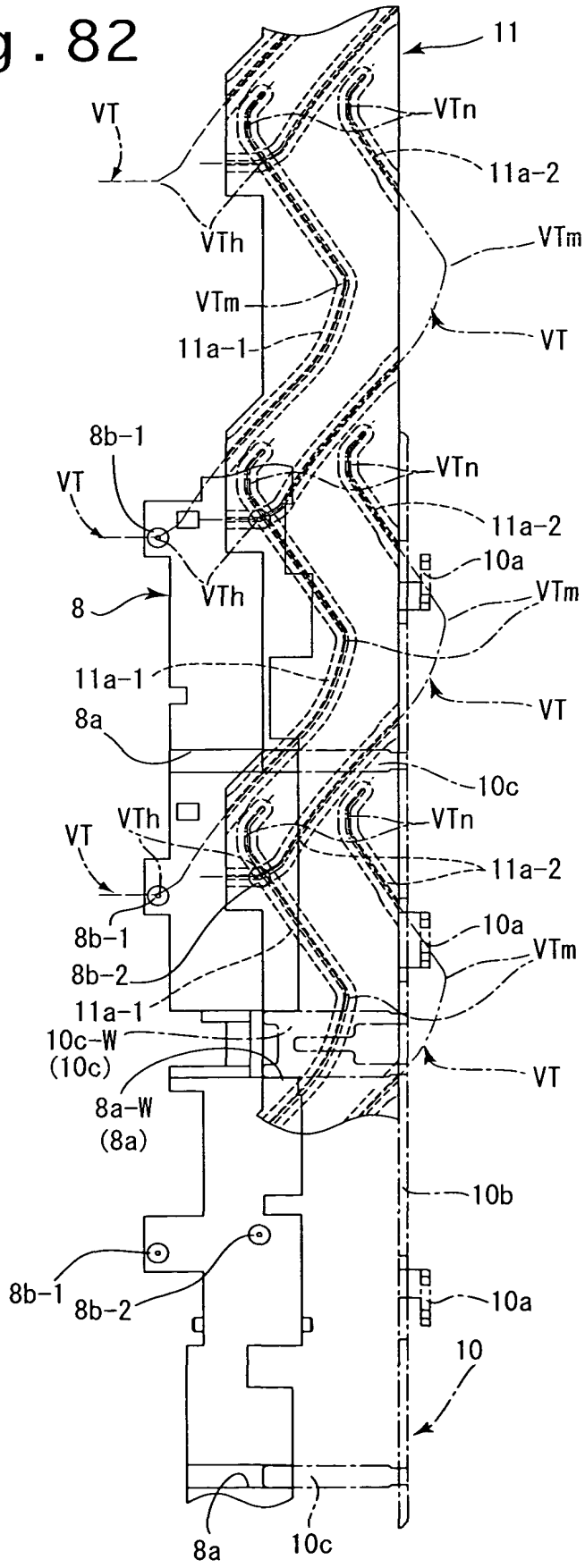

11
VT
VTn
11a-2
VTh
VTm
VTm
VT
11a-1
8b-1
VT
VTn
11a-2
10a
8
VTh
VTm
11a-1
VT
8a
10c
VTh
VT
VTn
11a-2
10a
8b-1
VTm
8b-2
11a-1
10c-W
(10c)
VT
8a-W
(8a)
10b
8b-1
8b-2
10a
10
8a
10c

Fig. 83

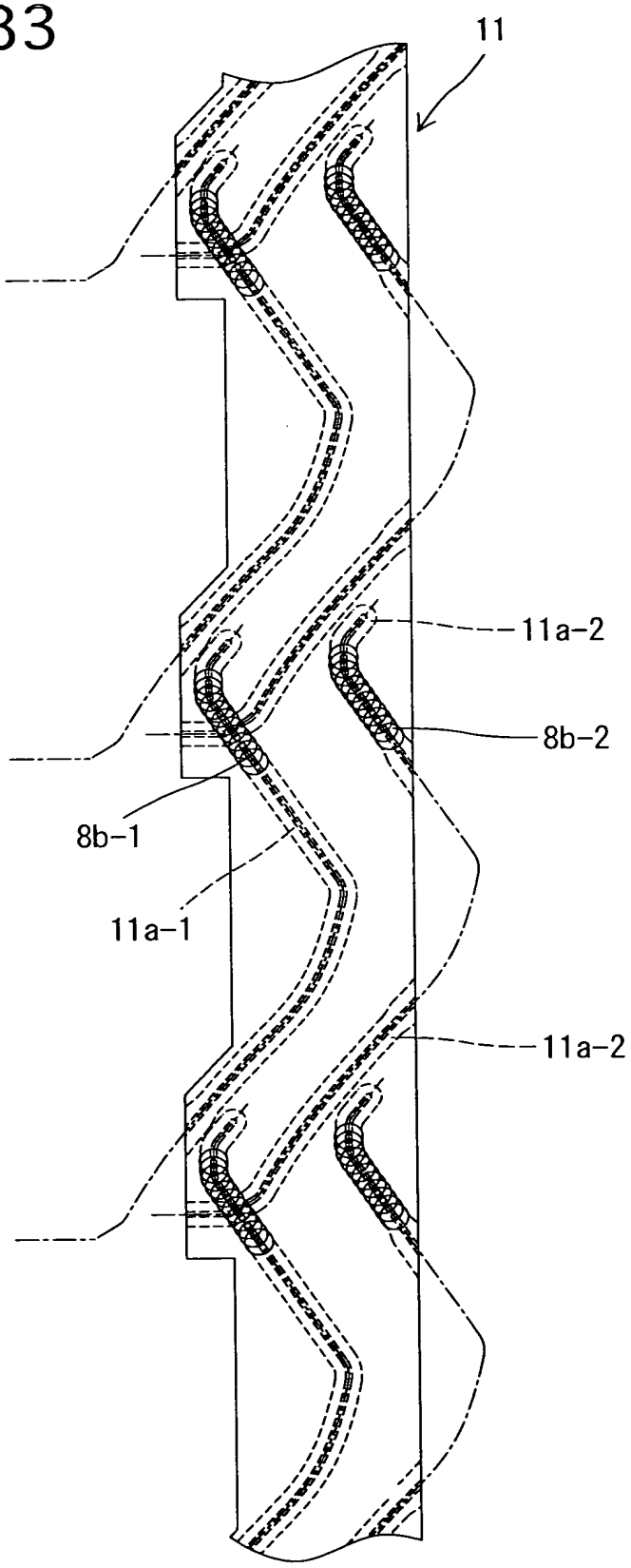


Fig. 84

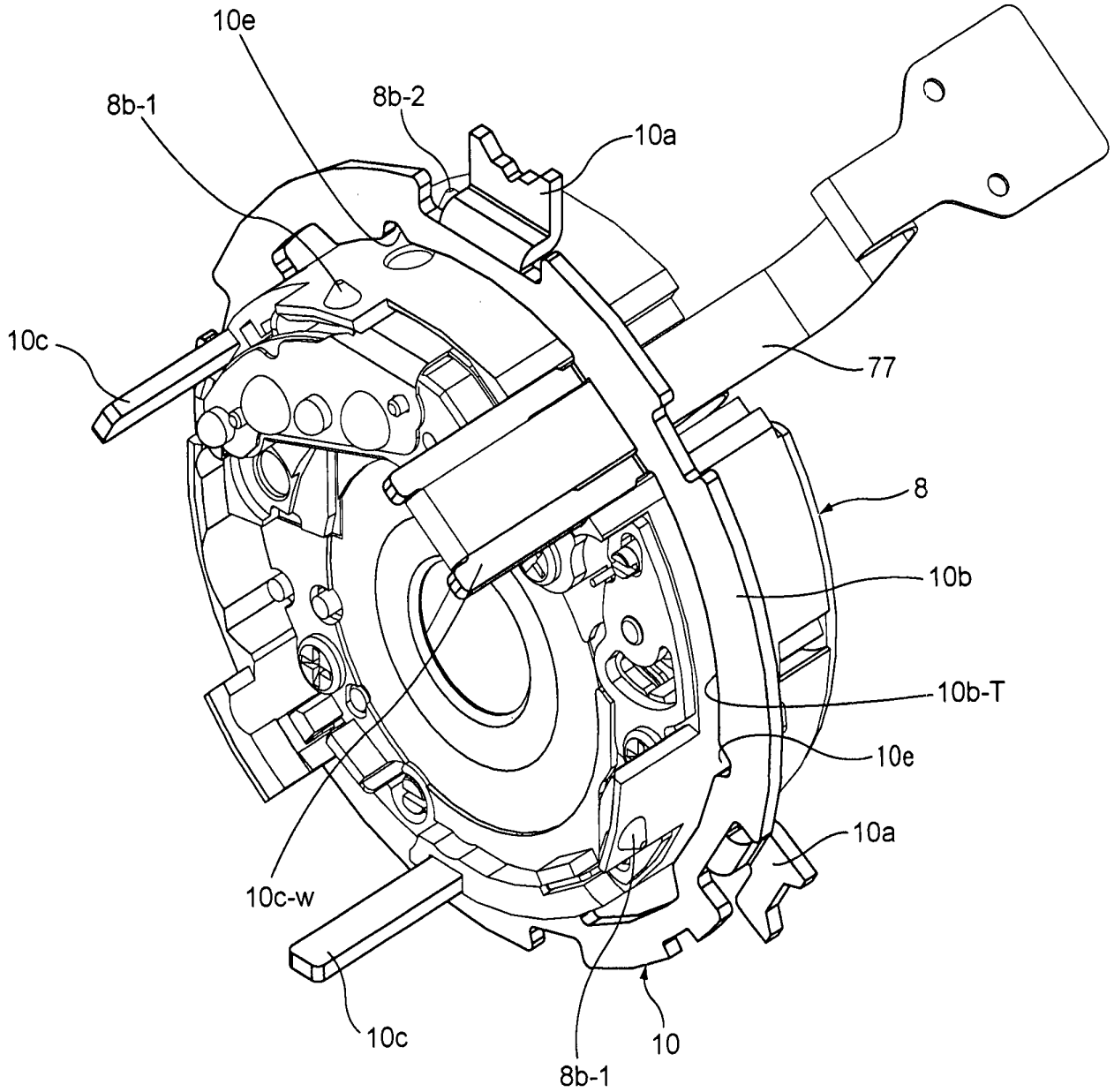


Fig. 85

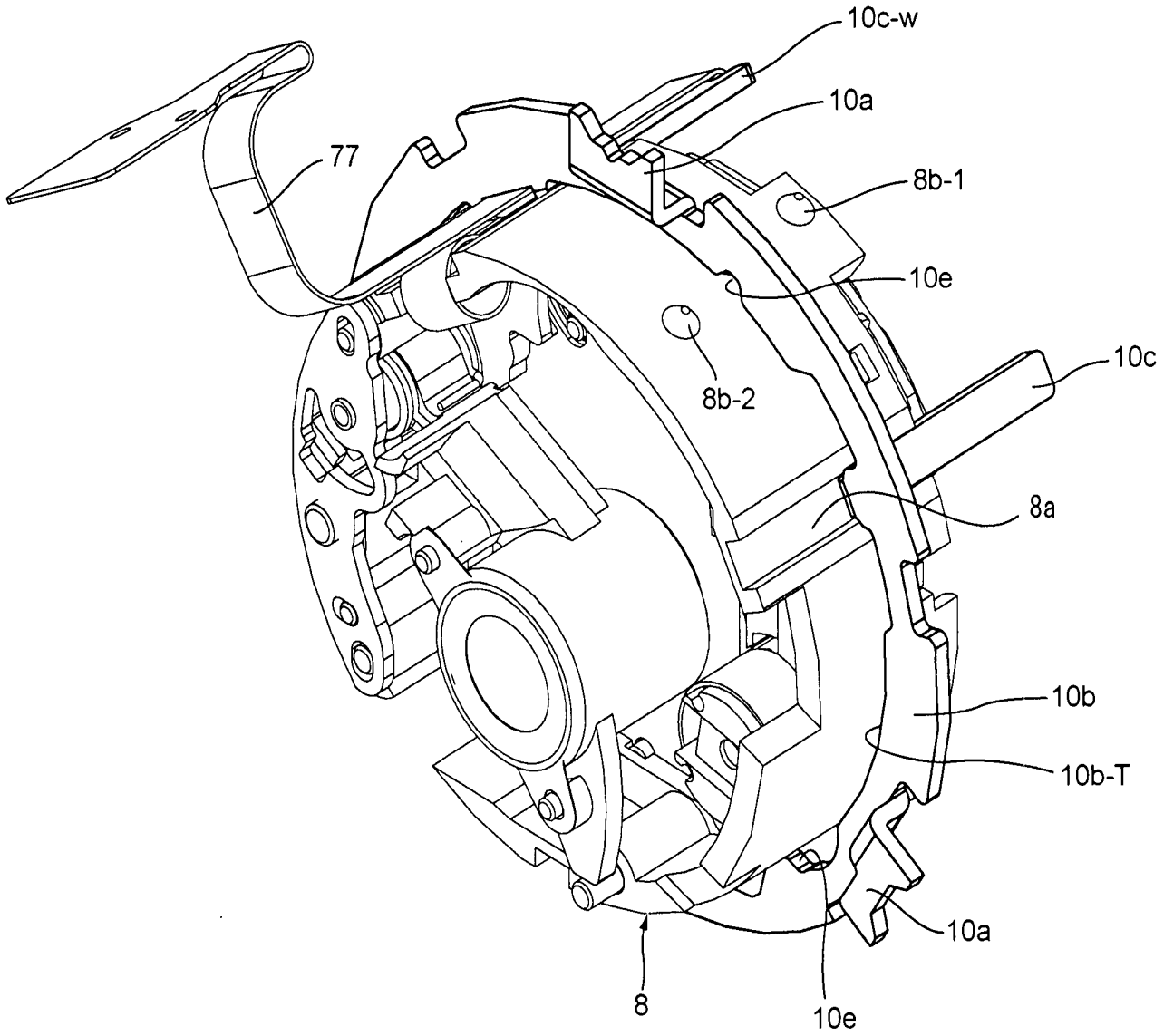


Fig. 86

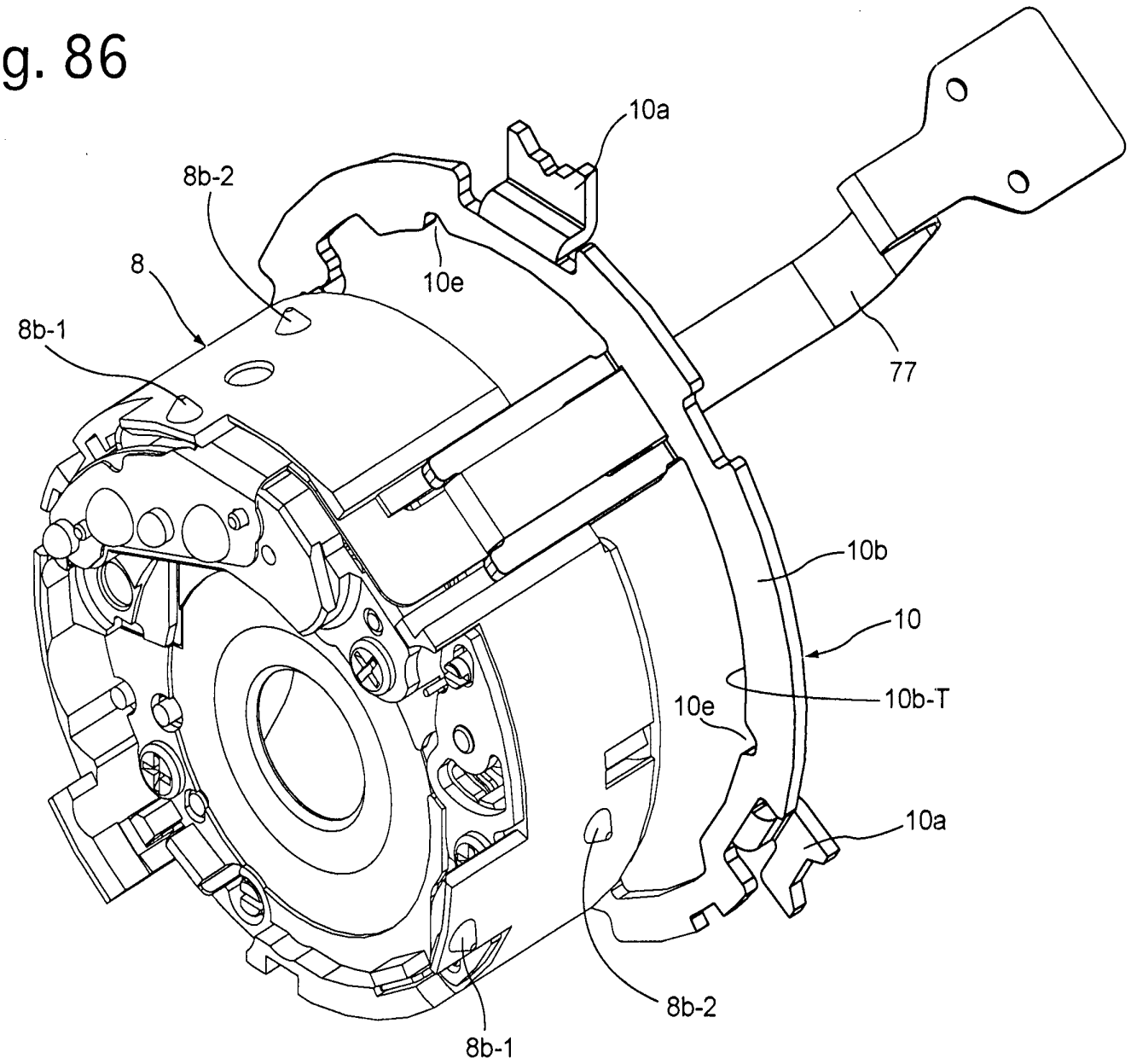


Fig. 87

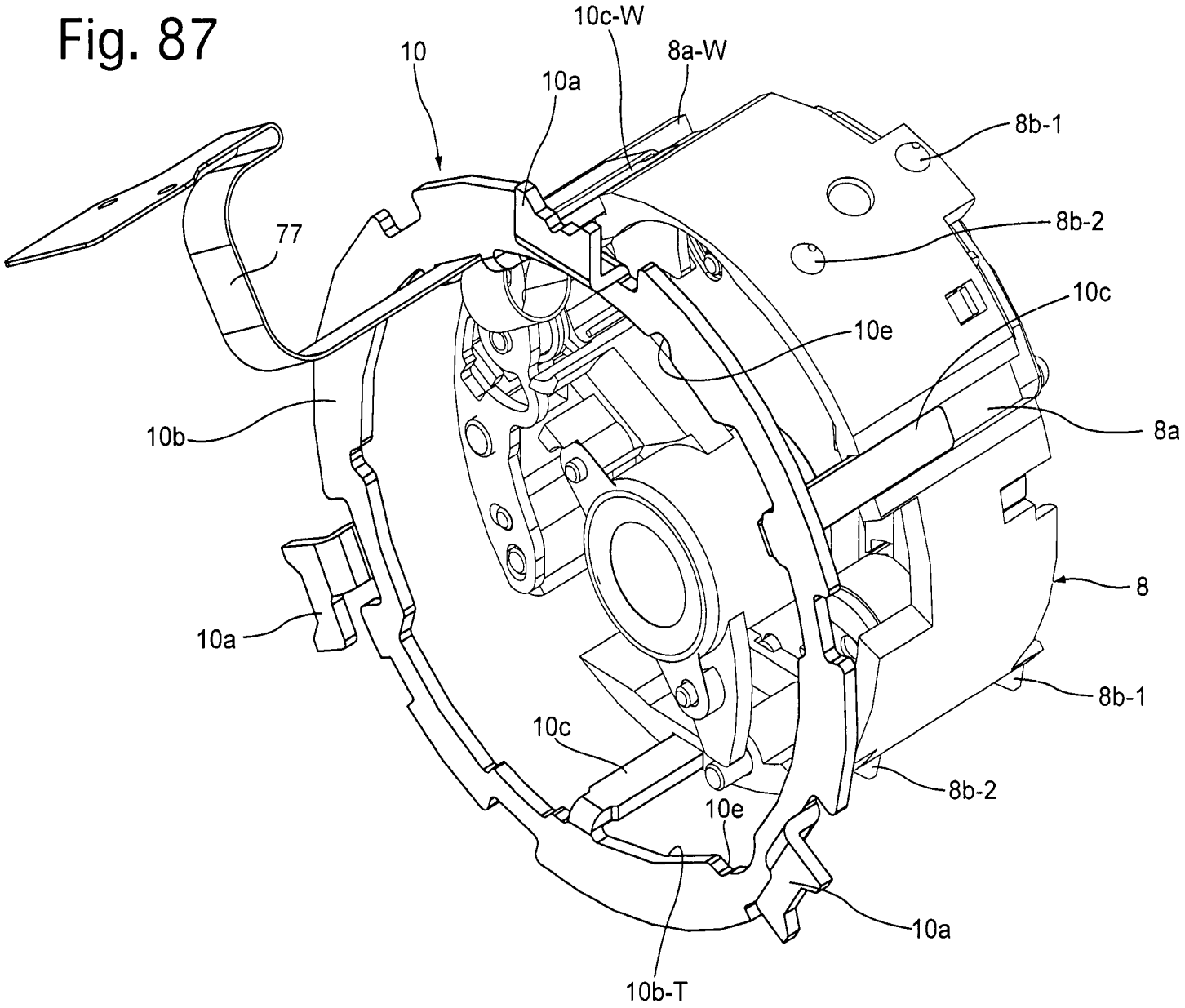

10c-W
10
8a-W
10a
8b-1
77
8b-2
10c
10e
10b
8a
8
10a
8b-1
10c
8b-2
10e
10a
10b-T

Fig. 88

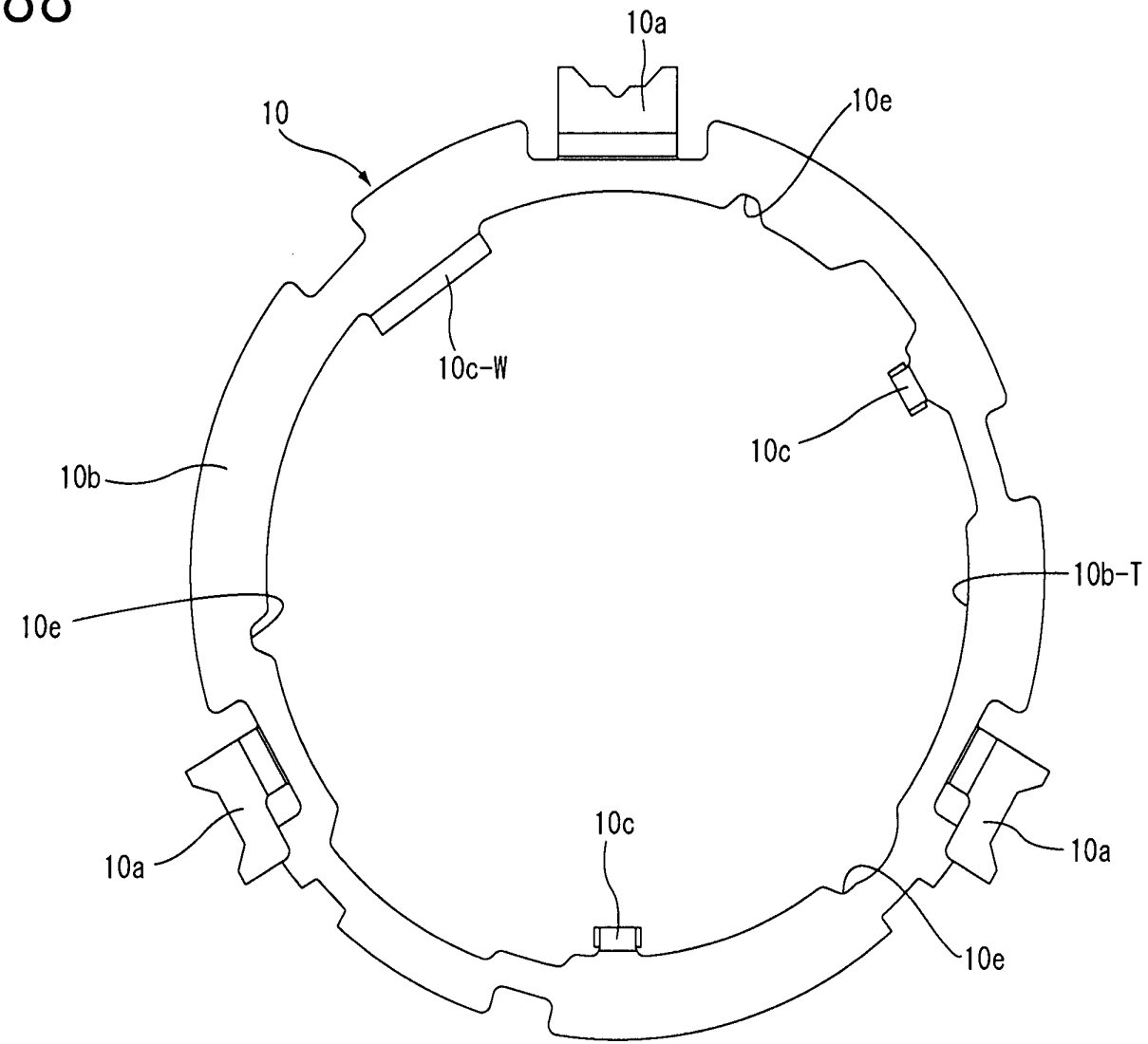


Fig. 89

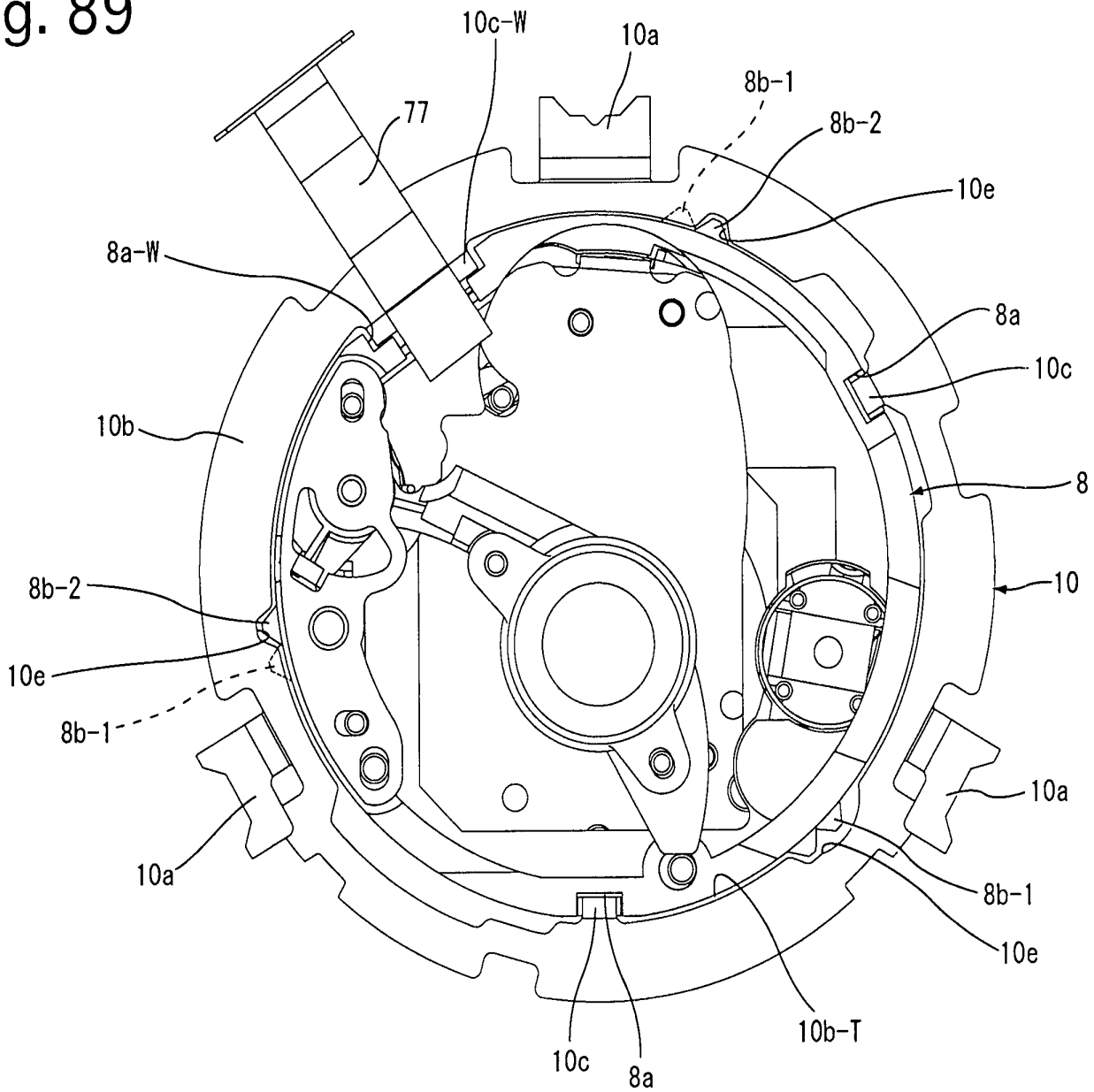

10c-W
10a
8b-1
77
8b-2
10e
8a-W
8a
10c
10b
8
8b-2
10
10e
8b-1
10a
10a
8b-1
10e
10b-T
10c
8a

Fig. 90

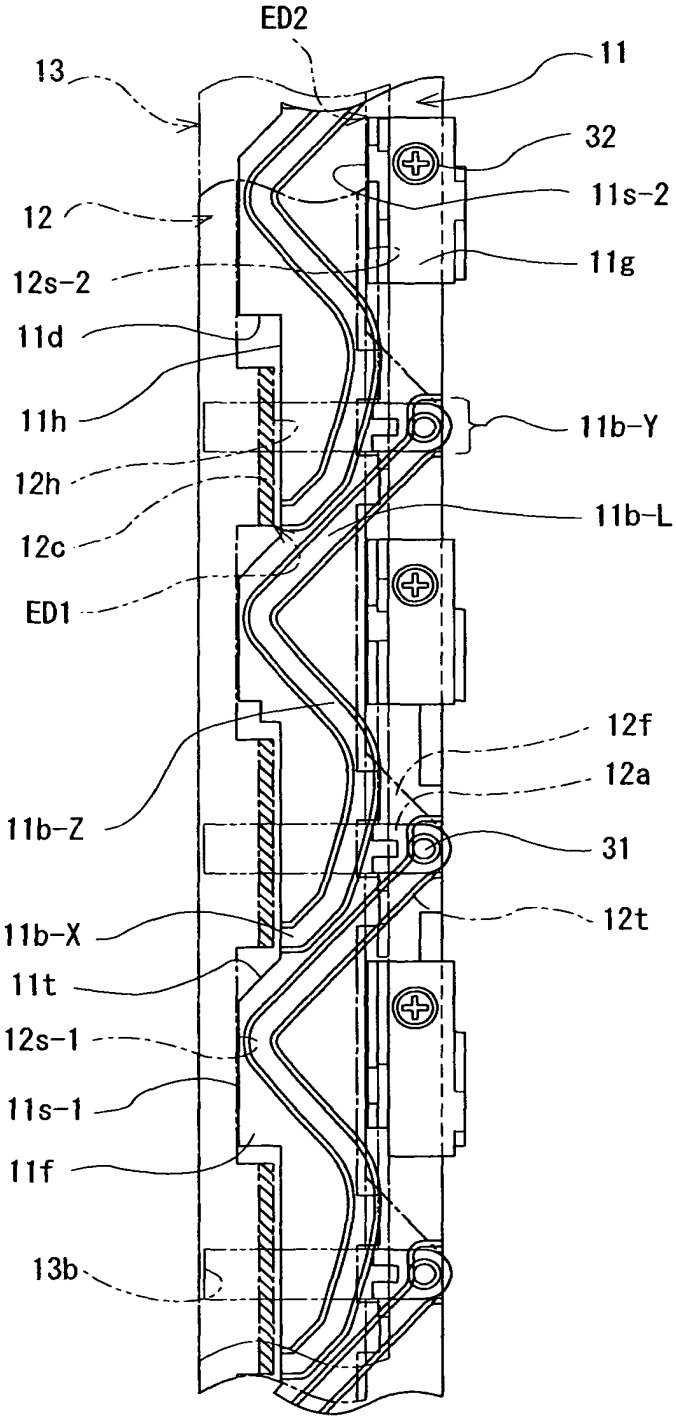

ED2
13
11
32
11s-2
12
11g
12s-2
11d
11h
11b-Y
12h
11b-L
12c
ED1
12f
12a
11b-Z
31
12t
11b-X
11t
12s-1
11s-1
11f
13b

Fig. 91

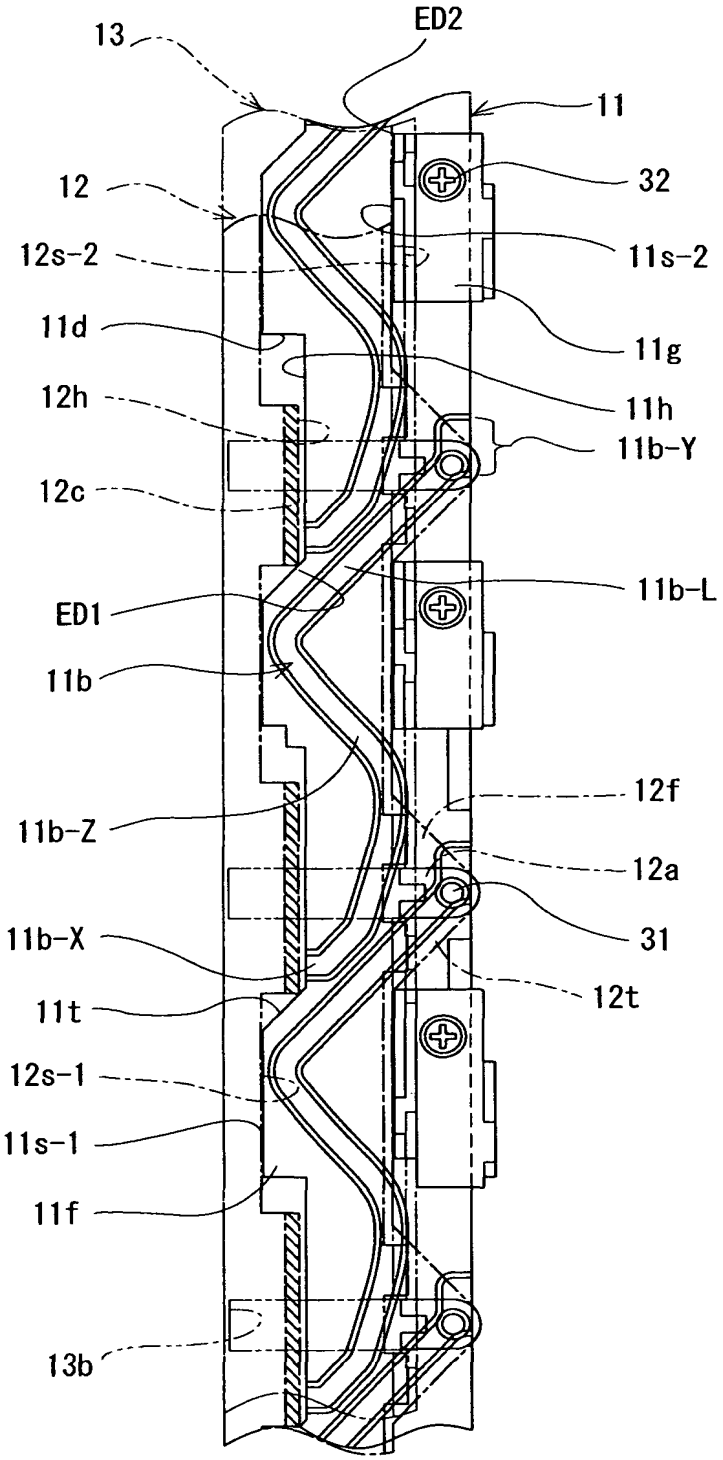

13
ED2
11
12
32
12s-2
11s-2
11d
11g
12h
11h
11b-Y
12c
11b-L
ED1
11b
12f
11b-Z
12a
11b-X
31
11t
12t
12s-1
11s-1
11f
13b

Fig. 92

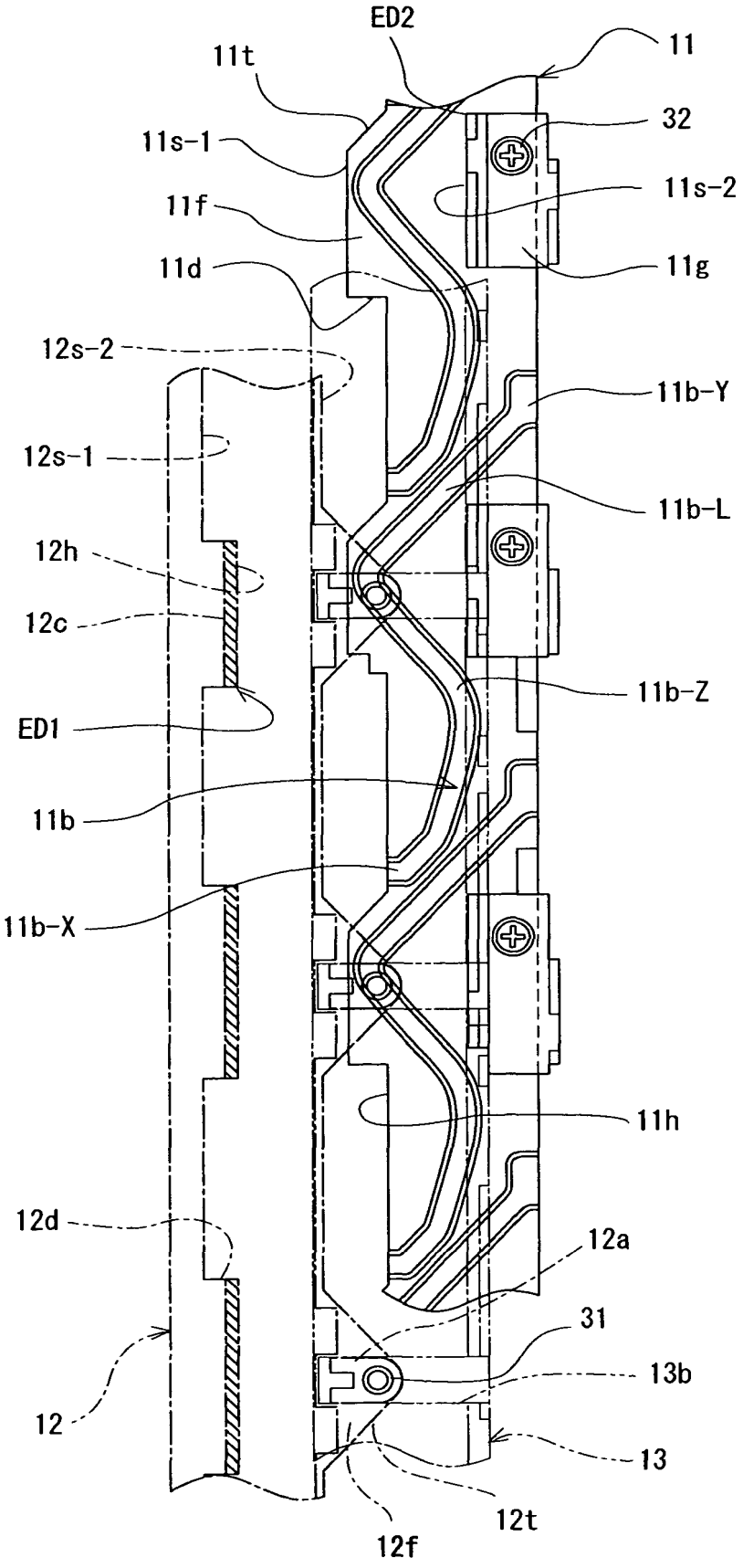

ED2
11t
11
32
11s-1
11s-2
11f
11d
11g
12s-2
11b-Y
12s-1
11b-L
12h
12c
11b-Z
ED1
11b
11b-X
11h
12d
12a
31
13b
12
13
12t
12f

Fig. 93

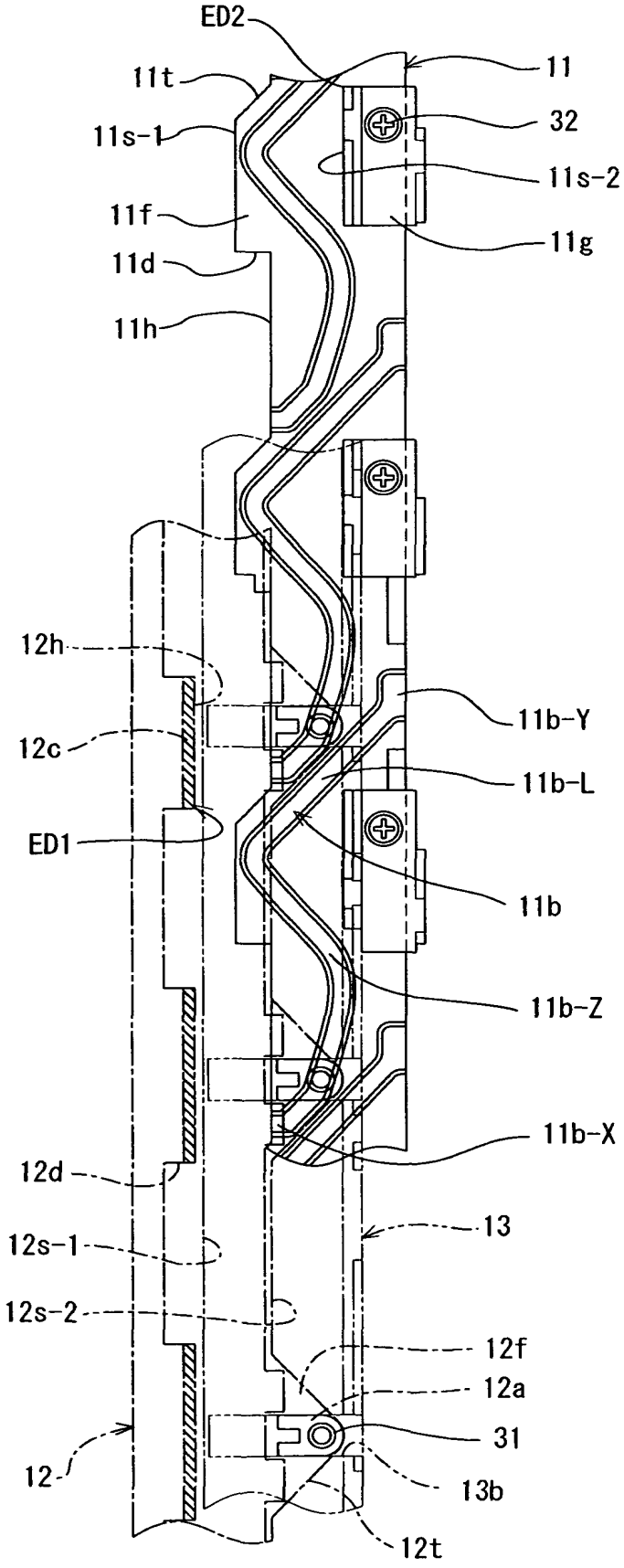

ED2
11t
11s-1
11f
11d
11h
11
32
11s-2
11g
12h
12c
ED1
11b-Y
11b-L
11b
11b-Z
11b-X
12d
12s-1
12s-2
13
12f
12a
31
13b
12
12t

Fig. 94

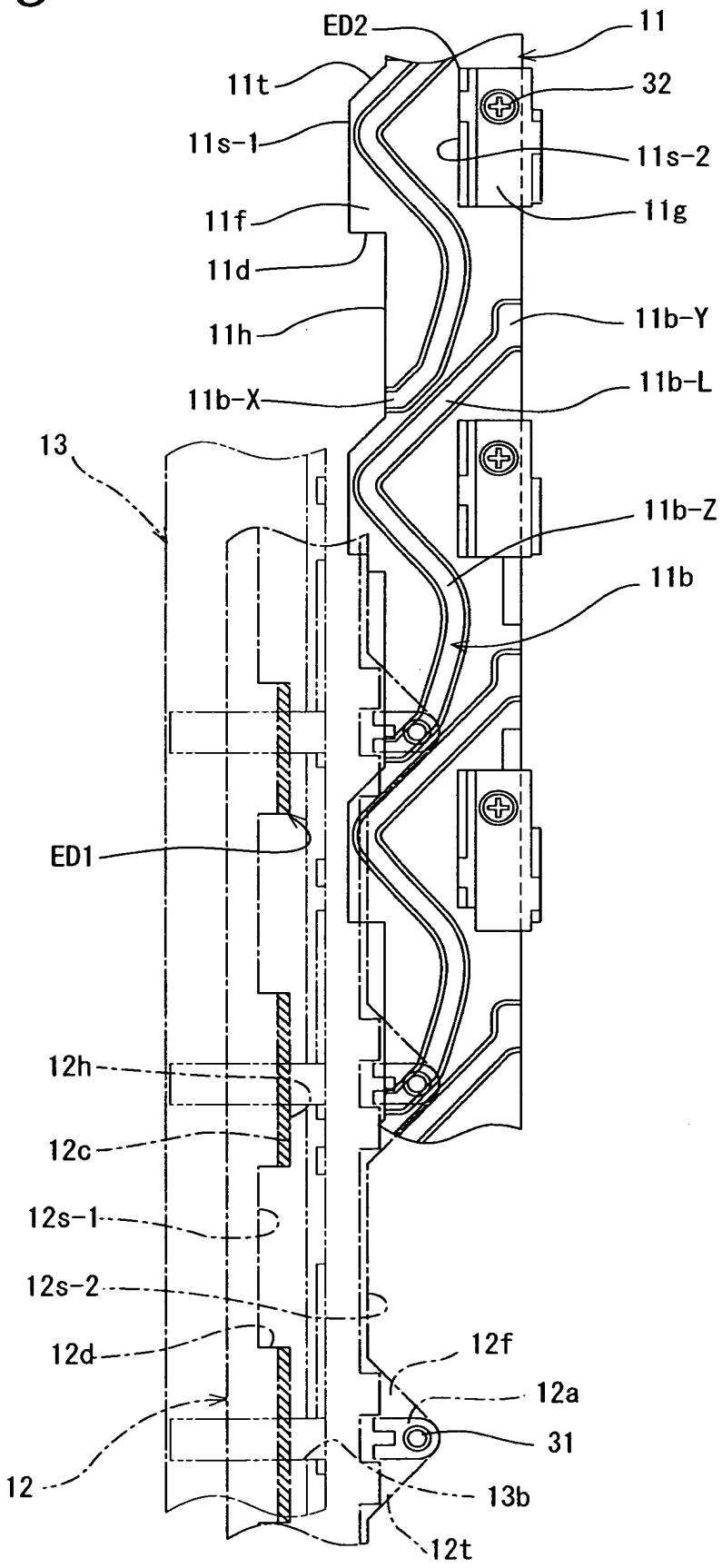

ED2
11
11t
32
11s-1
11s-2
11f
11g
11d
11h
11b-Y
11b-X
11b-L
13
11b-Z
11b
ED1
12h
12c
12s-1
12s-2
12d
12f
12a
31
12
13b
12t

Fig. 95

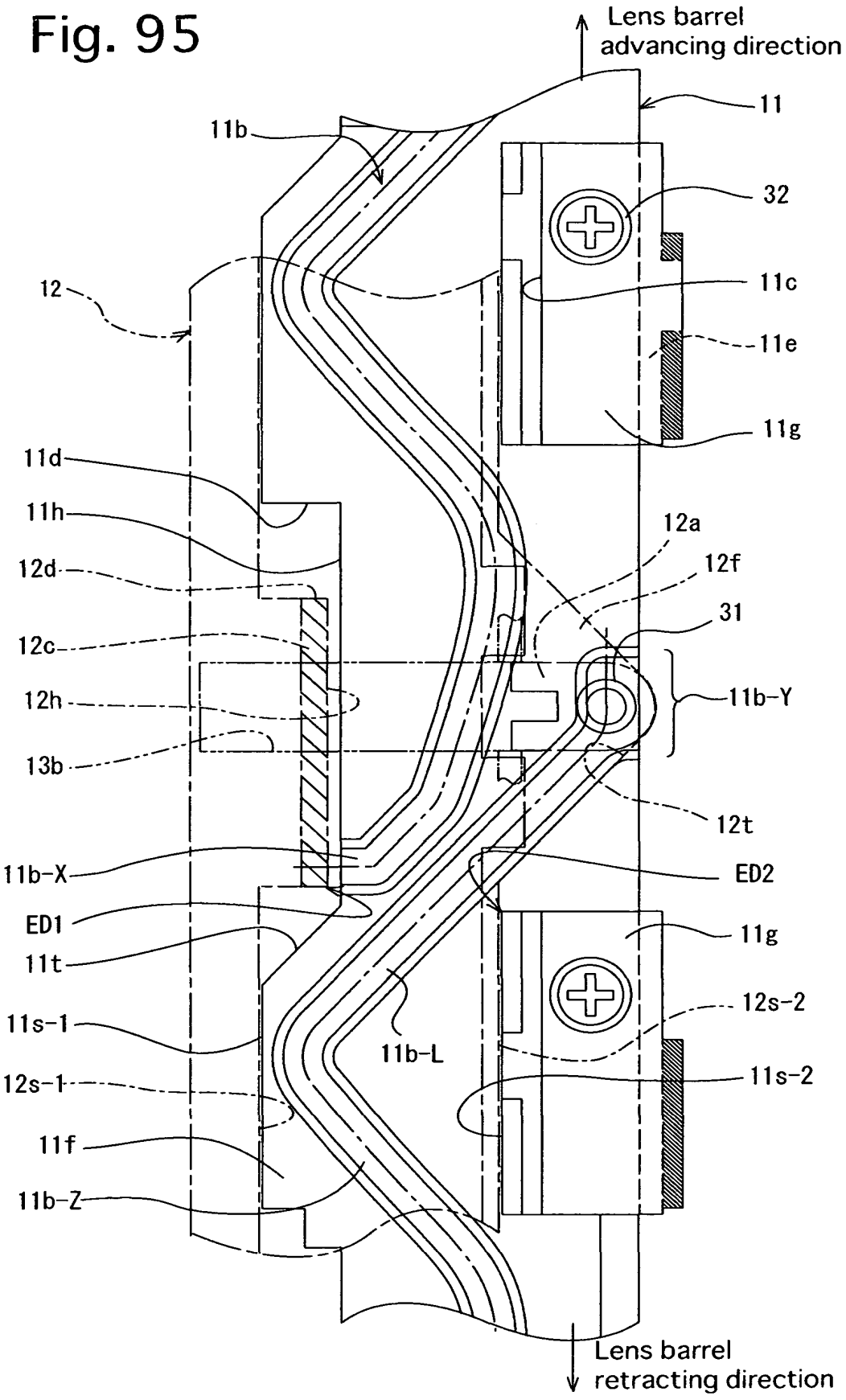

Lens barrel advancing direction
11
11b
32
12
11c
11e
11g
11d
11h
12a
12d
12f
31
12c
11b-Y
12h
13b
12t
11b-X
ED2
ED1
11g
11t
12s-2
11s-1
11b-L
12s-1
11s-2
11f
11b-Z
Lens barrel retracting direction

Fig. 96

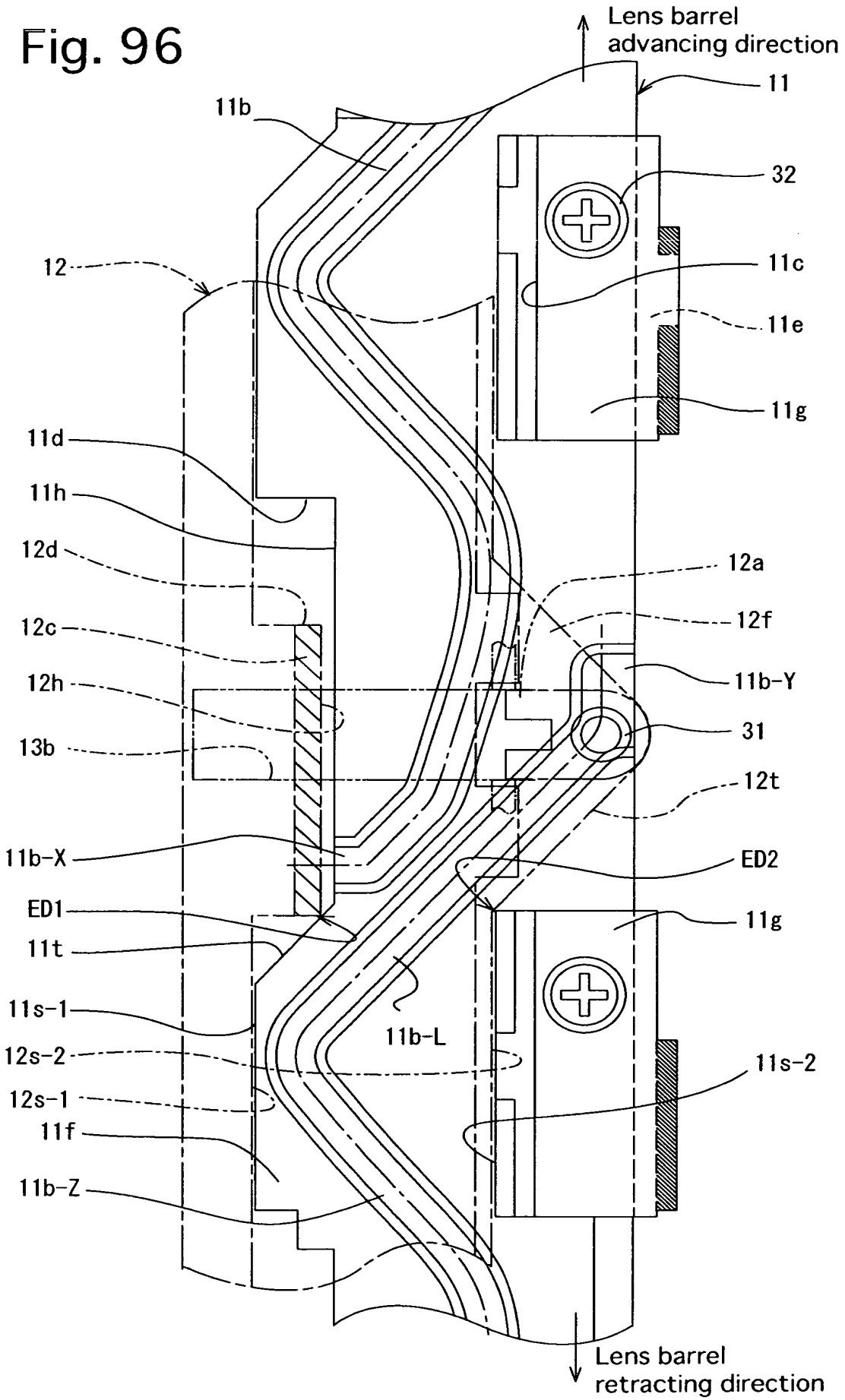

Lens barrel advancing direction
11
11b
32
12
11c
11e
11g
11d
11h
12d
12a
12f
12c
11b-Y
12h
31
13b
12t
11b-X
ED2
ED1
11g
11t
11s-1
11b-L
12s-2
11s-2
12s-1
11f
11b-Z
Lens barrel retracting direction

Fig. 97

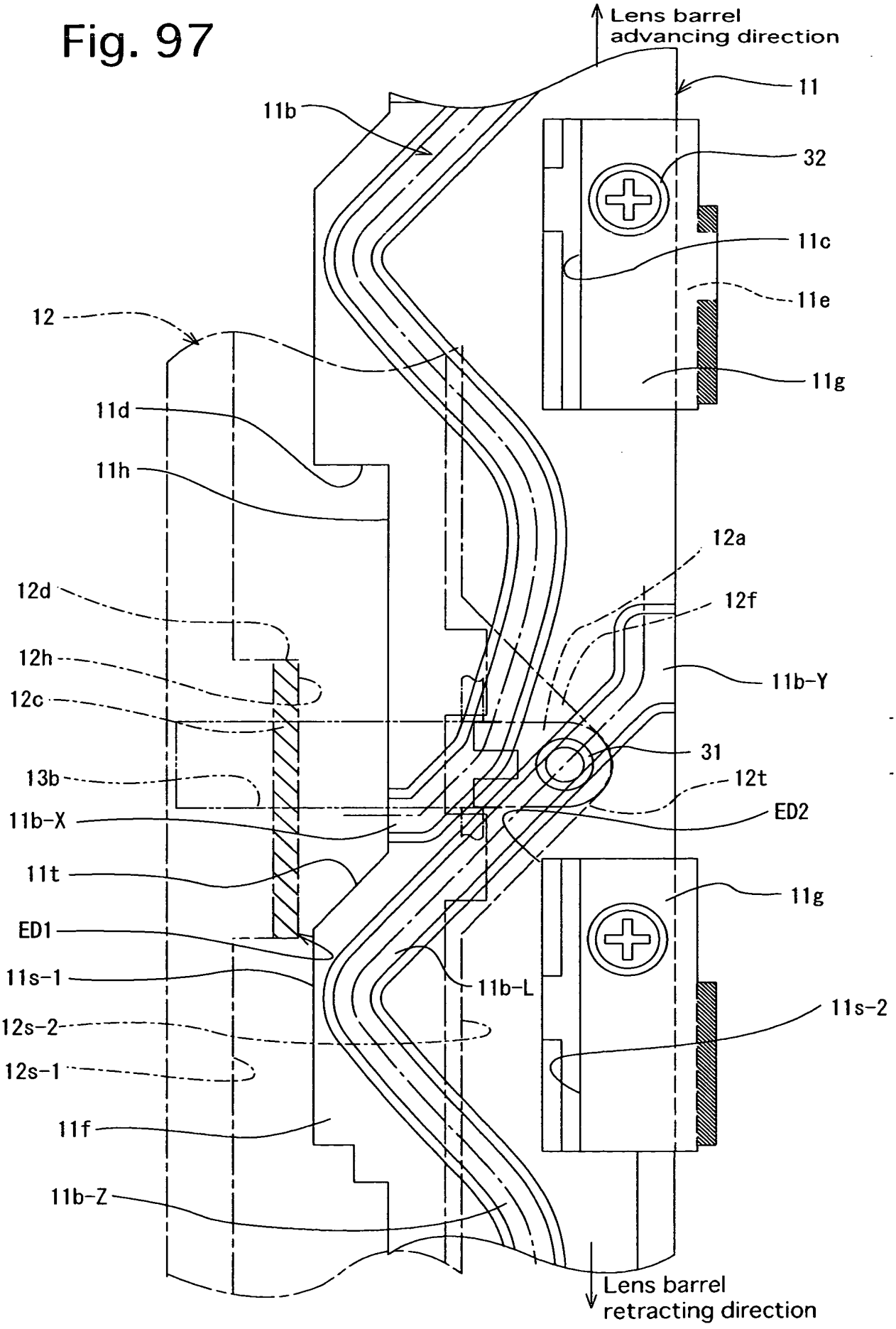

Lens barrel advancing direction
11
11b
32
11c
11e
12
11g
11d
11h
12a
12d
12f
12h
11b-Y
12c
31
13b
12t
11b-X
ED2
11t
11g
ED1
11b-L
11s-1
11s-2
12s-2
12s-1
11f
11b-Z
Lens barrel retracting direction

Fig. 98

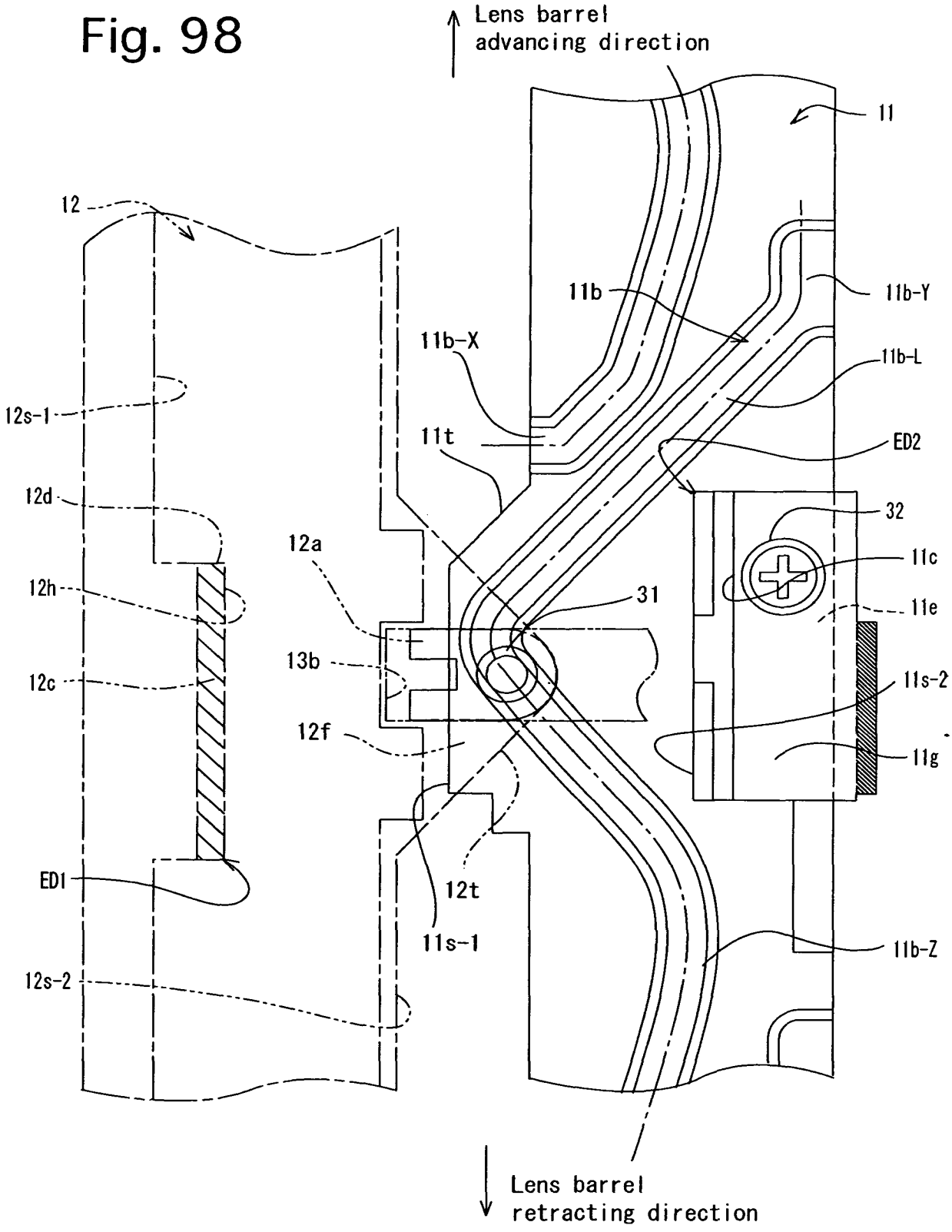

Lens barrel
advancing direction
11
12
11b
11b-Y
11b-X
11b-L
12s-1
11t
ED2
12d
32
12a
11c
12h
31
11e
13b
12c
11s-2
12f
11g
ED1
12t
11s-1
11b-Z
12s-2
Lens barrel
retracting direction

Fig. 99

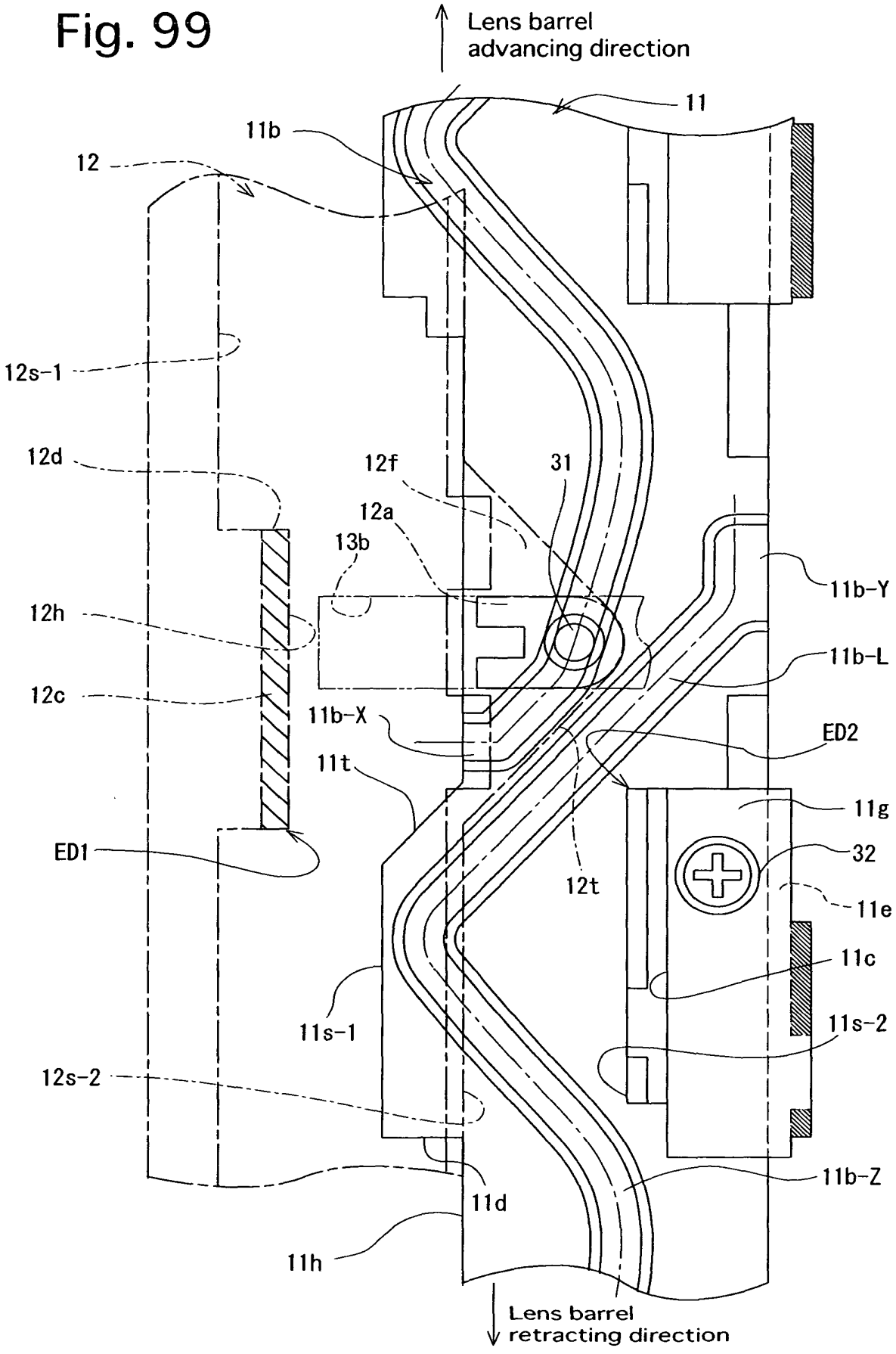

Lens barrel
advancing direction
11
11b
12
12s-1
12d
12f
31
12a
13b
11b-Y
12h
11b-L
12c
11b-X
ED2
11t
11g
ED1
32
12t
11e
11c
11s-1
11s-2
12s-2
11b-Z
11d
11h
Lens barrel
retracting direction

Fig. 100

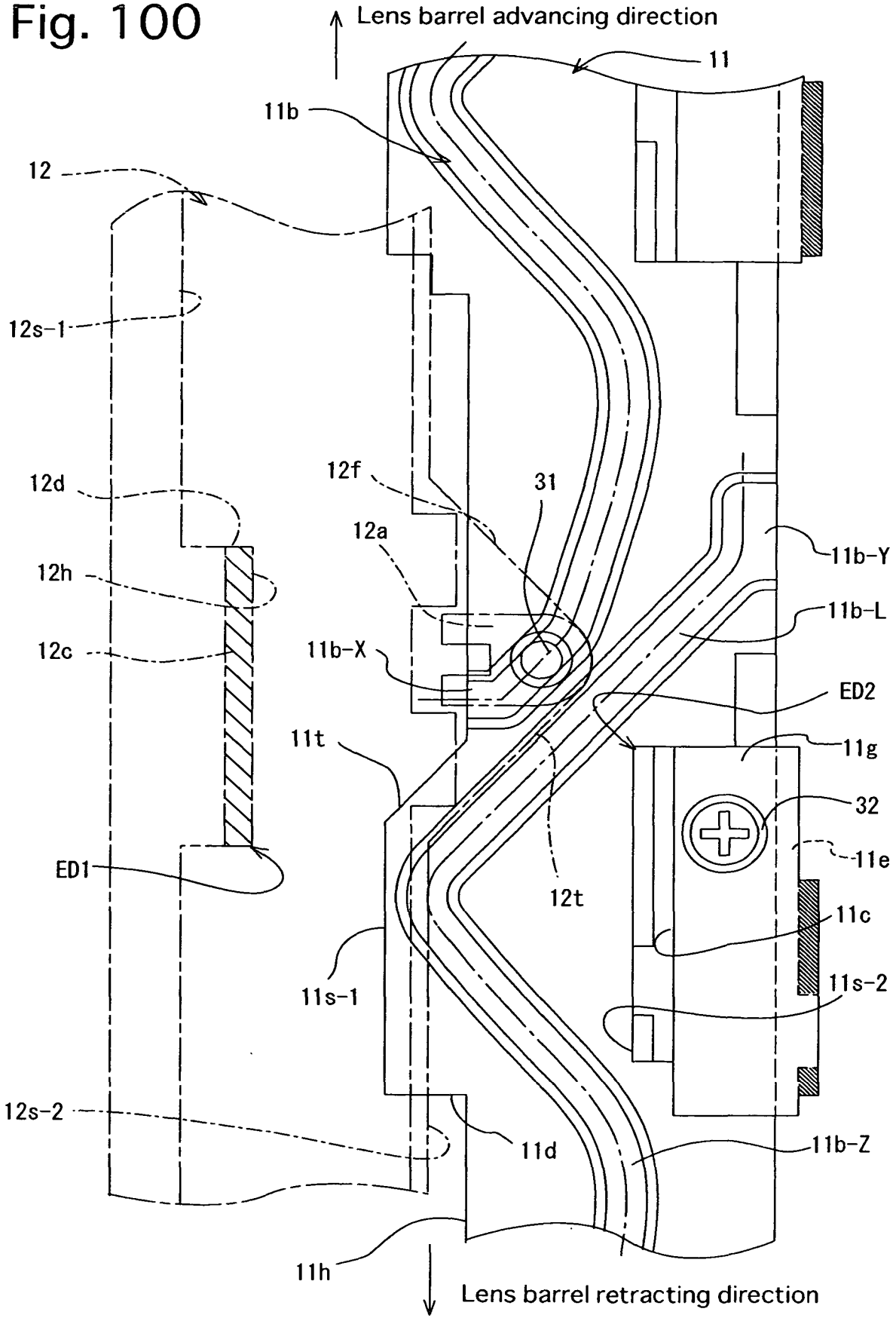

Lens barrel advancing direction
11
11b
12
12s-1
12d
12f
31
12a
12h
11b-Y
11b-L
12c
11b-X
ED2
11t
11g
32
11e
ED1
12t
11c
11s-1
11s-2
12s-2
11d
11b-Z
11h
Lens barrel retracting direction

Fig. 101

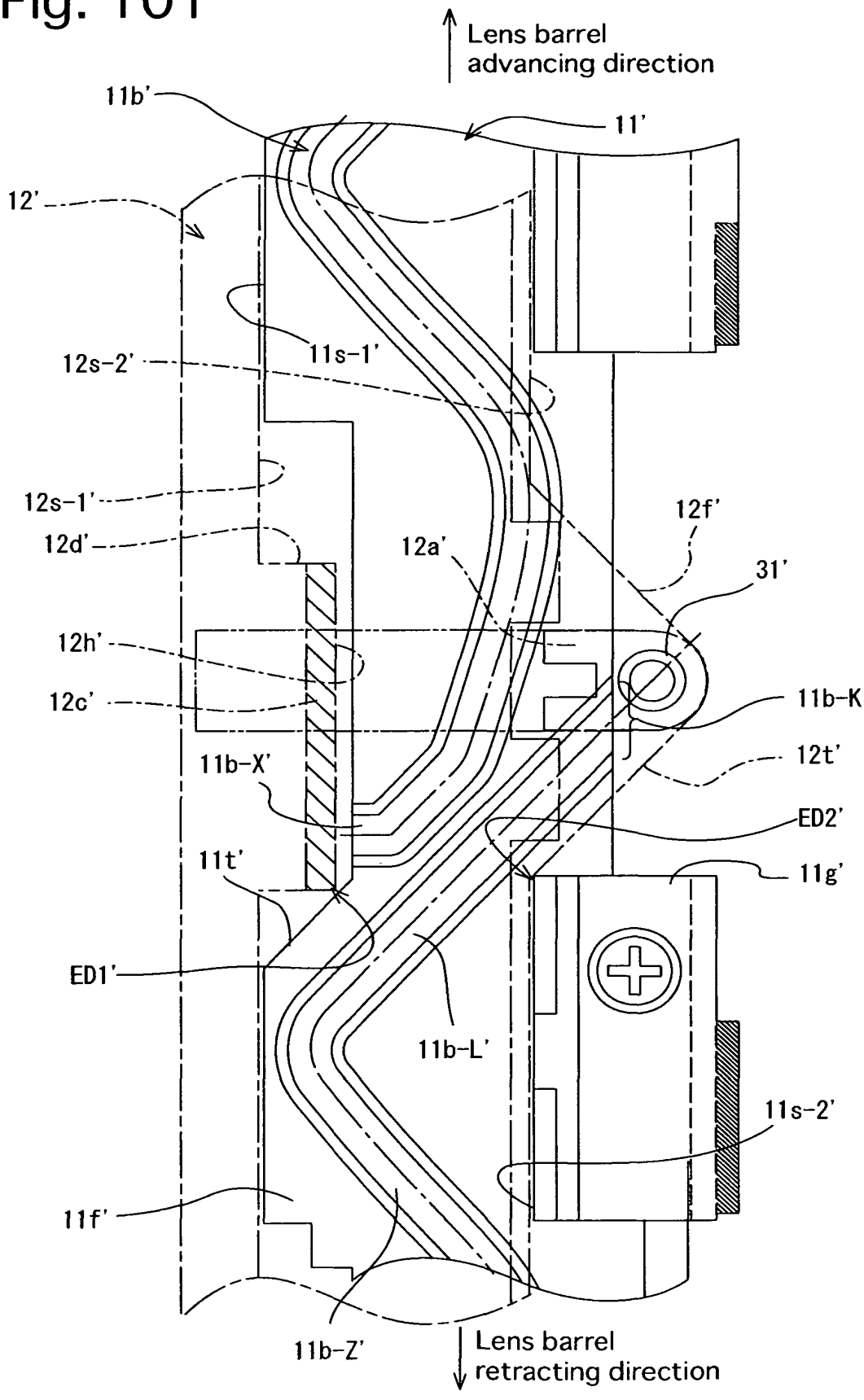

Lens barrel advancing direction
11b'
11'
12'
11s-1'
12s-2'
12s-1'
12d'
12h'
12c'
12a'
12f'
31'
11b-K
12t'
11b-X'
ED2'
11t'
11g'
ED1'
11b-L'
11s-2'
11f'
11b-Z'
Lens barrel retracting direction

Fig . 102

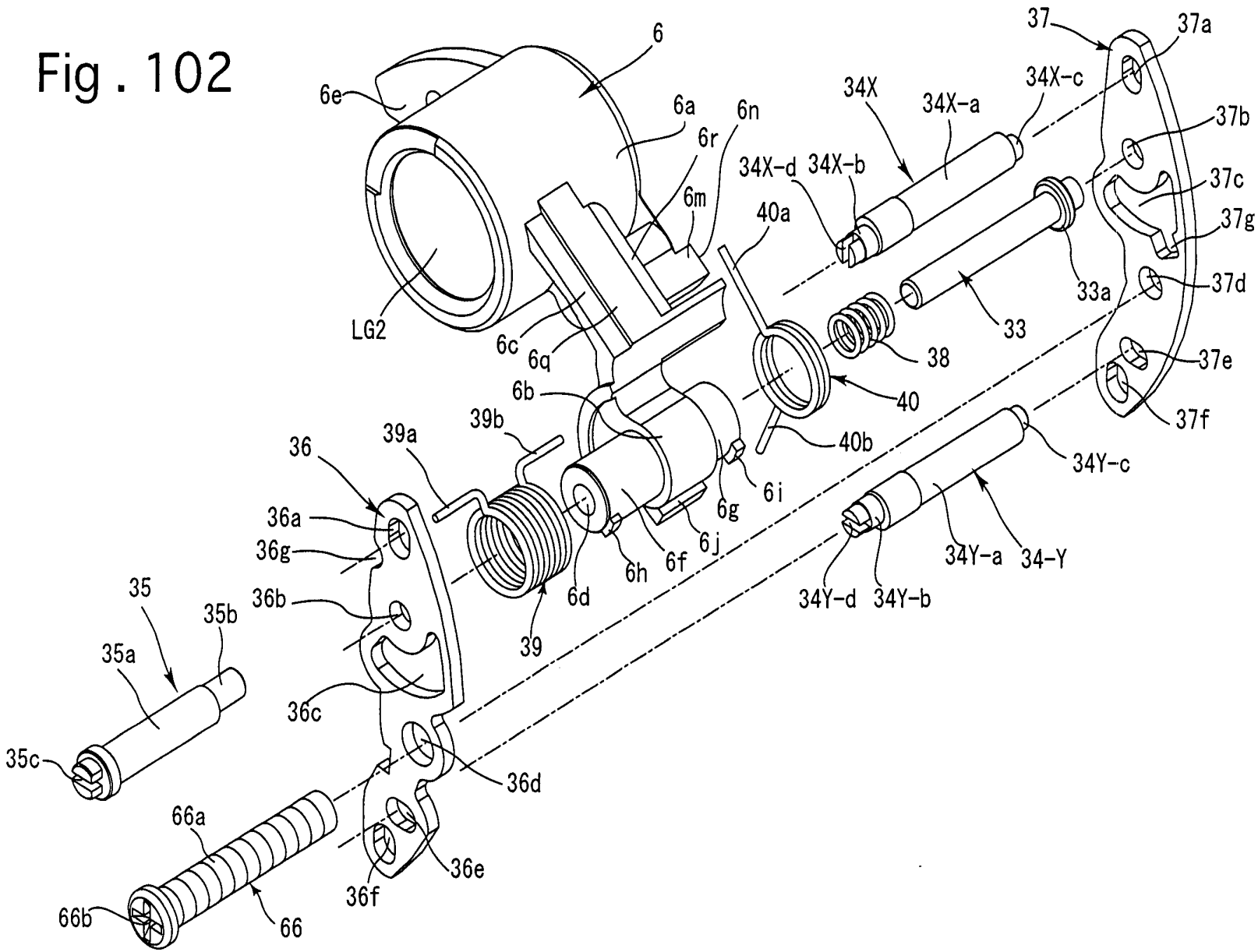

6
6e
6a
6n
6r
6m
LG2
6c
6q
6b
39b
39a
36
36a
36g
36b
36c
36d
36e
36f
35
35a
35b
35c
66a
66b
66
39
6d
6h
6f
6j
6g
6i
40a
40
40b
34X
34X-a
34X-c
34X-d
34X-b
33
33a
38
37
37a
37b
37c
37g
37d
37e
37f
34Y-c
34Y-a
34-Y
34Y-d
34Y-b

Fig . 103

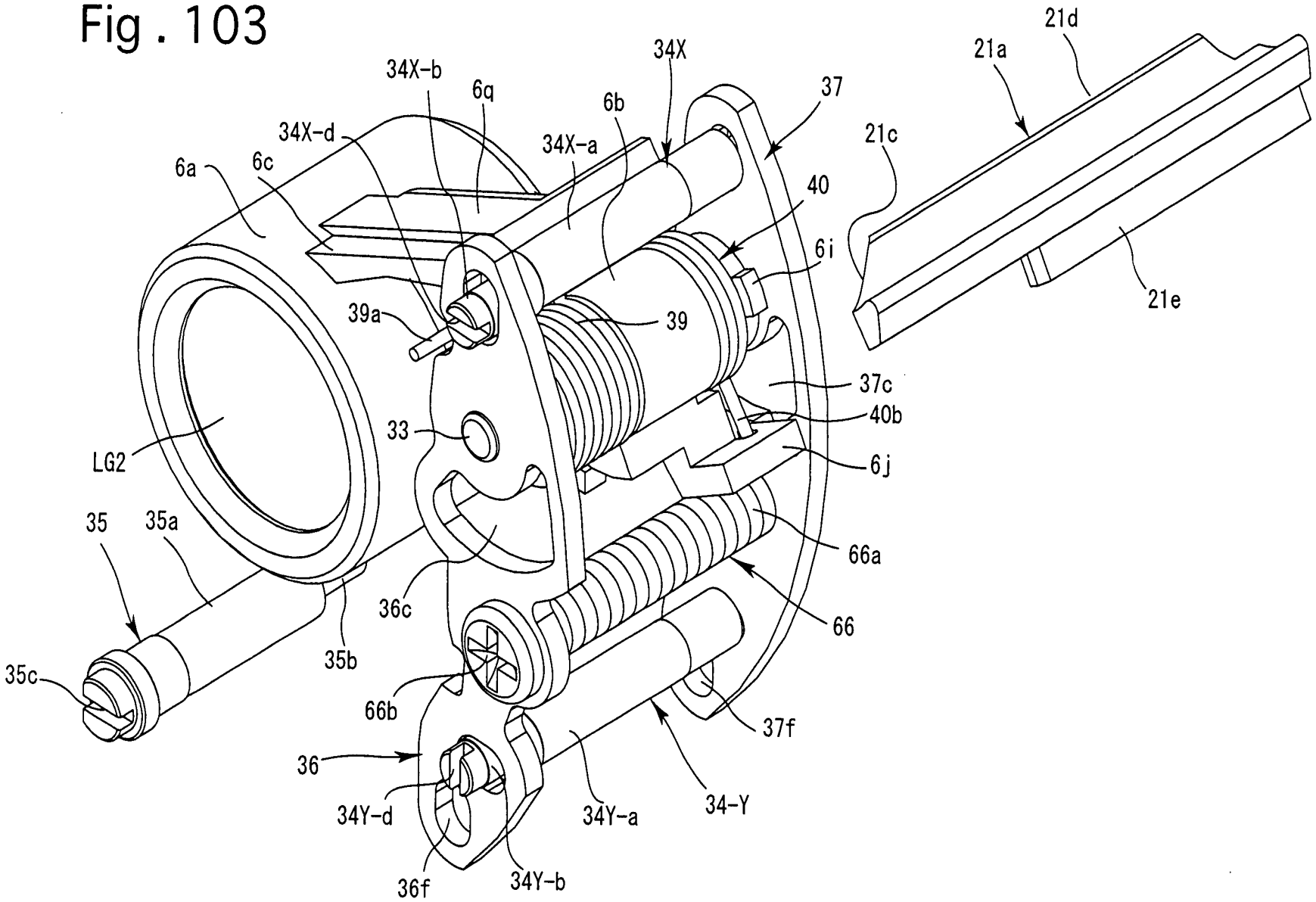

21d
21a
34X
34X-b
6q
6b
37
21c
34X-d
34X-a
6a
6c
40
6i
21e
39a
39
37c
40b
33
LG2
6j
35
35a
66a
36c
66
35b
35c
66b
37f
36
34Y-d
34Y-a
34-Y
36f
34Y-b

Fig . 104

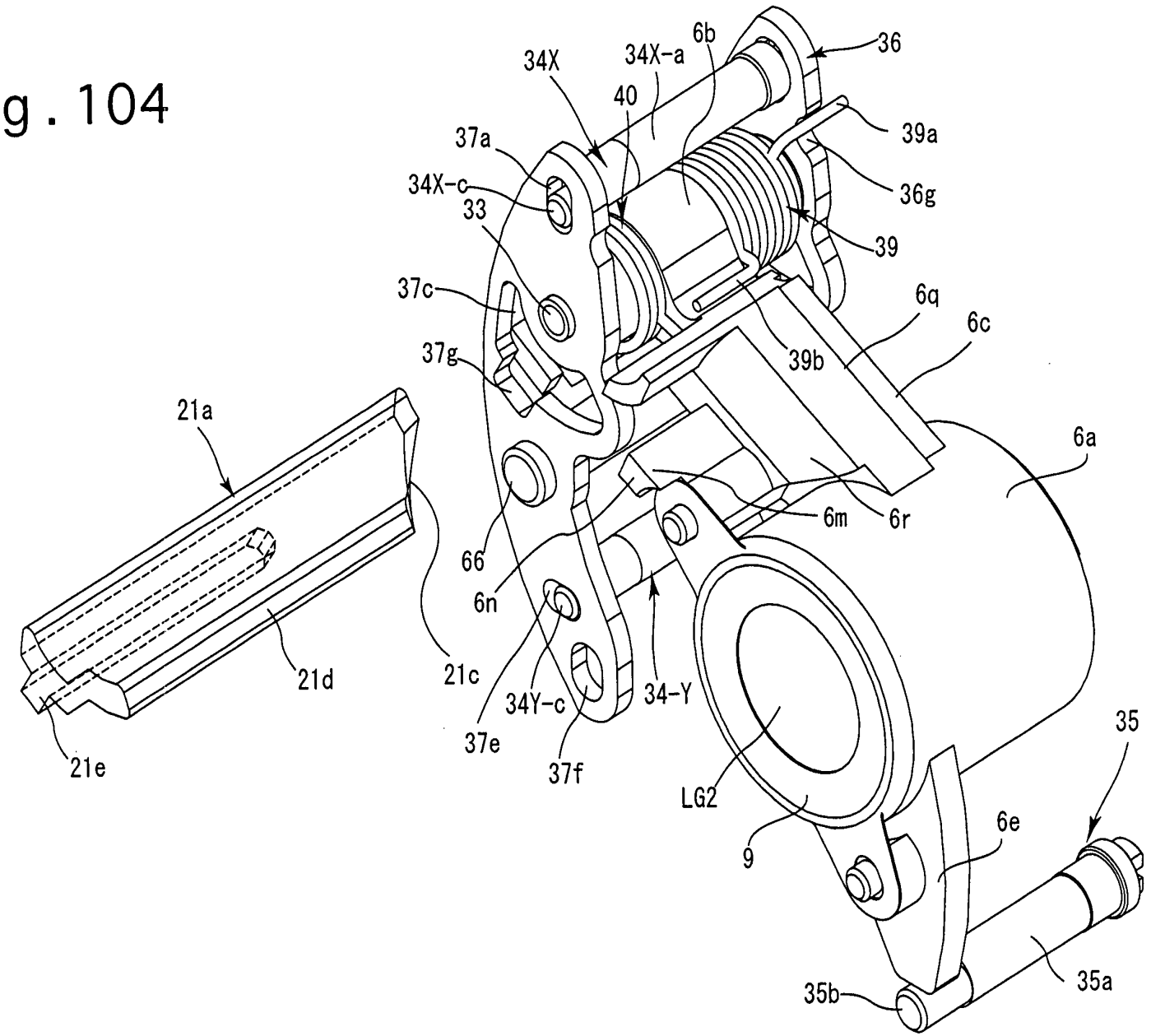

34X
34X-a
6b
36
40
37a
39a
34X-c
36g
33
39
37c
6q
6c
37g
39b
21a
6a
6m
6r
66
6n
21d
21c
34Y-c
34-Y
37e
37f
LG2
35
9
6e
21e
35b
35a

Fig. 105

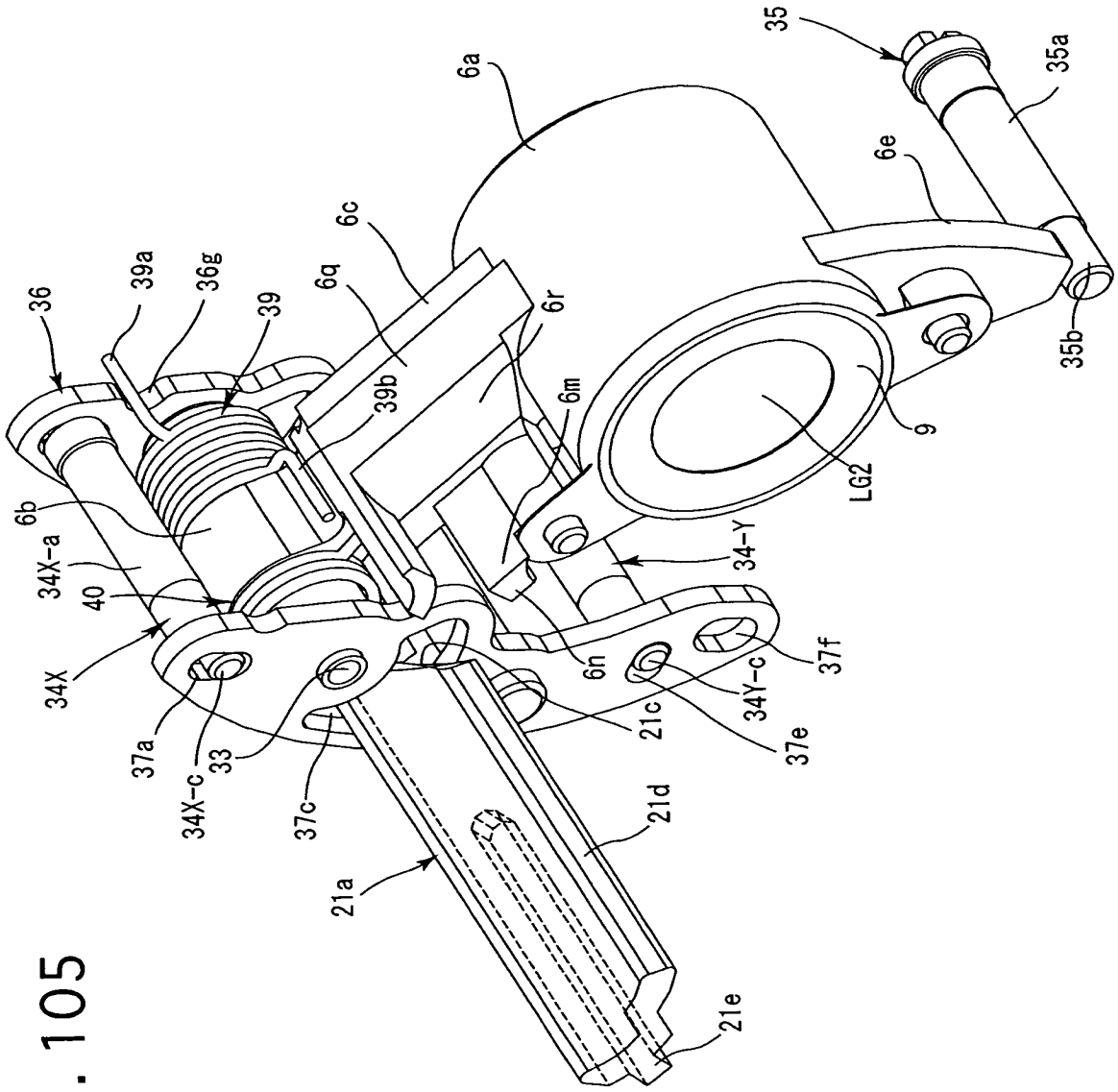

35
35a
6a
6e
6c
6q
6r
39a
36g
39
36
39b
6m
35b
9
LG2
6b
34X-a
40
34X
34-Y
6n
37f
34Y-c
21c
37e
37a
34X-c
33
37c
21d
21a
21e

Fig. 106

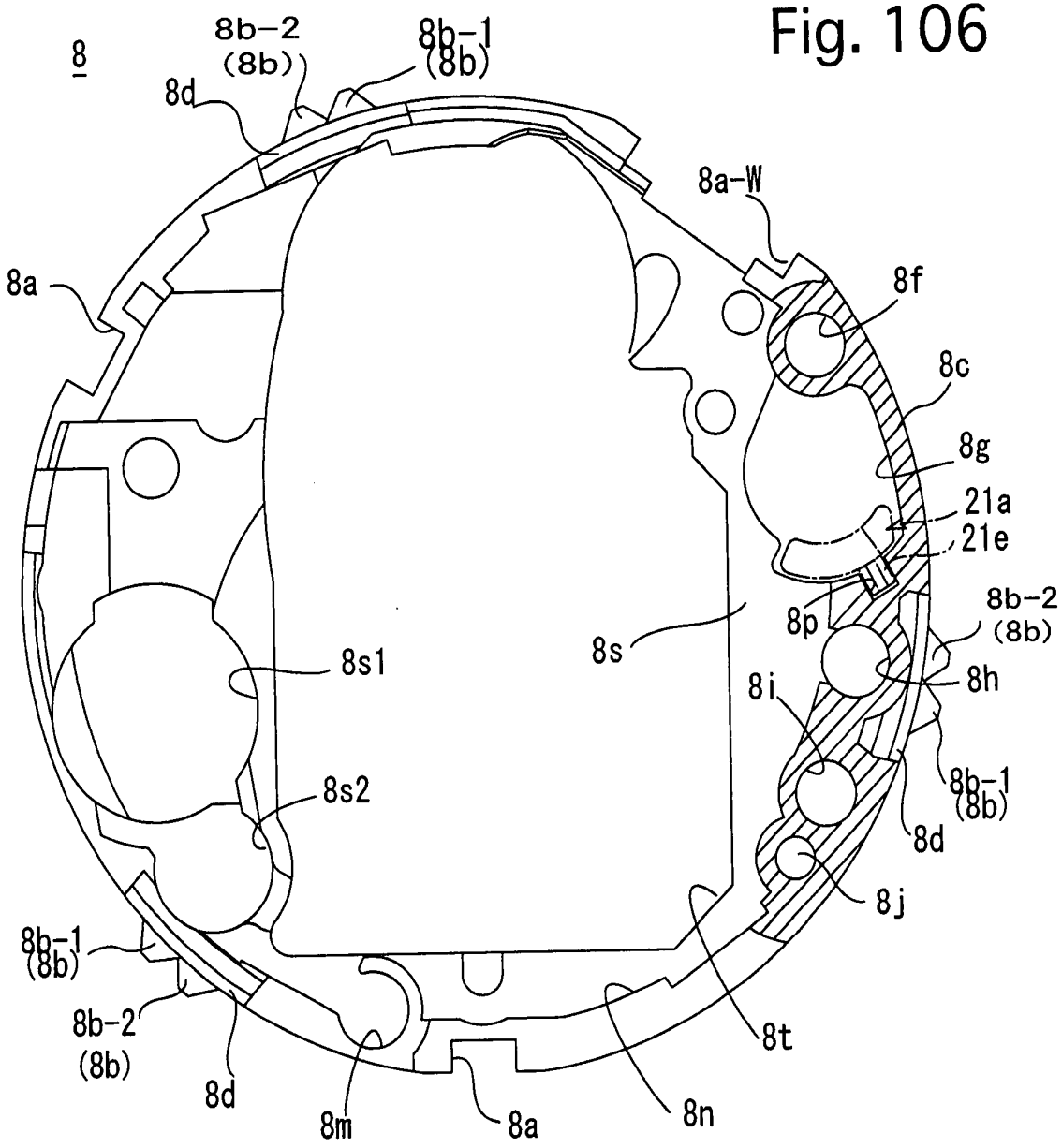

8
8b-2
(8b)
8b-1
(8b)
8d
8a-W
8a
8f
8c
8g
21a
21e
8p
8b-2
(8b)
8s
8s1
8h
8i
8s2
8b-1
(8b)
8d
8j
8b-1
(8b)
8b-2
(8b)
8d
8m
8a
8n
8t

Fig. 107

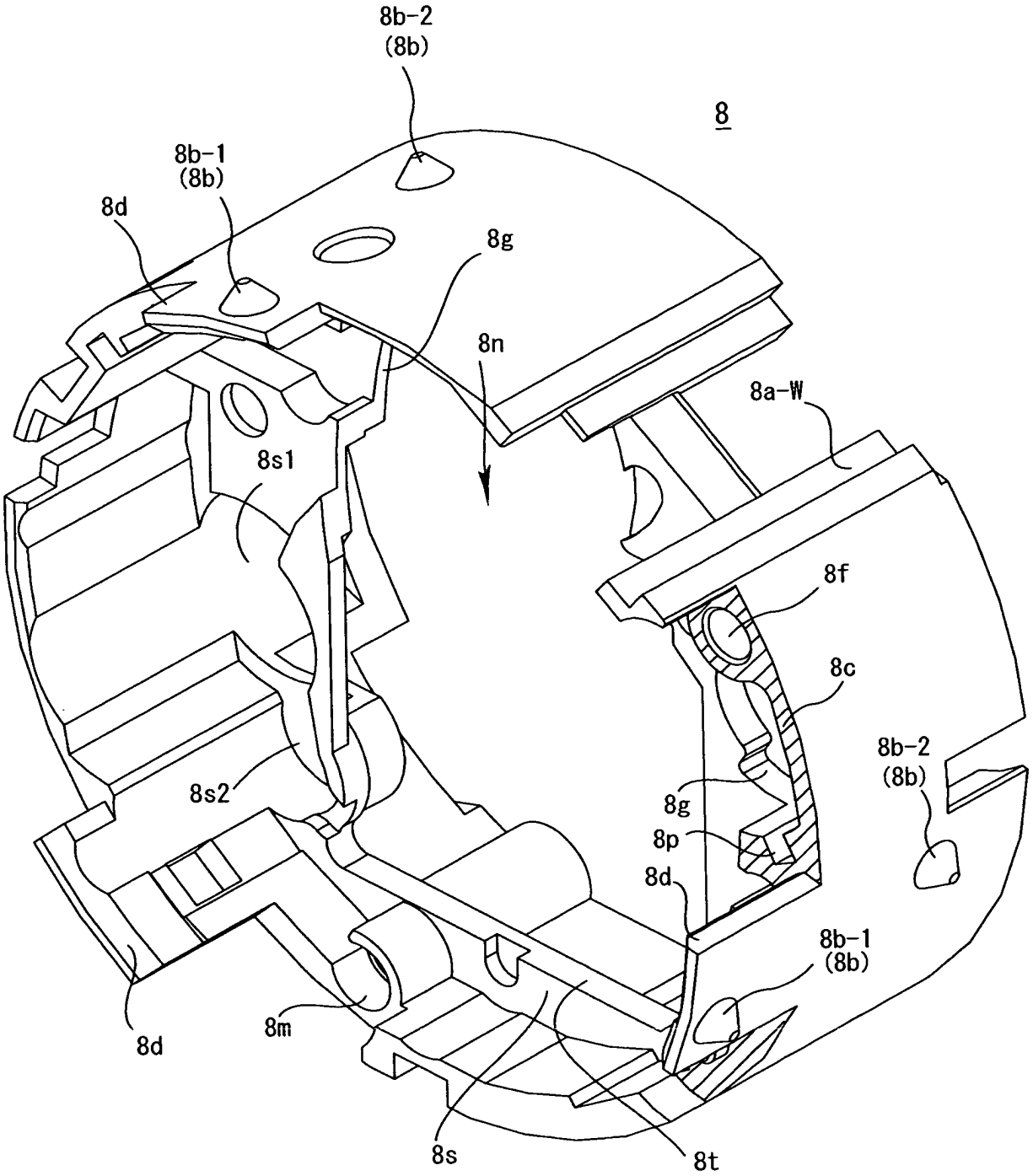

8b-2
(8b)
8
8b-1
(8b)
8d
8g
8n
8a-W
8s1
8f
8c
8b-2
(8b)
8s2
8g
8p
8d
8b-1
(8b)
8d
8m
8s
8t

Fig. 108

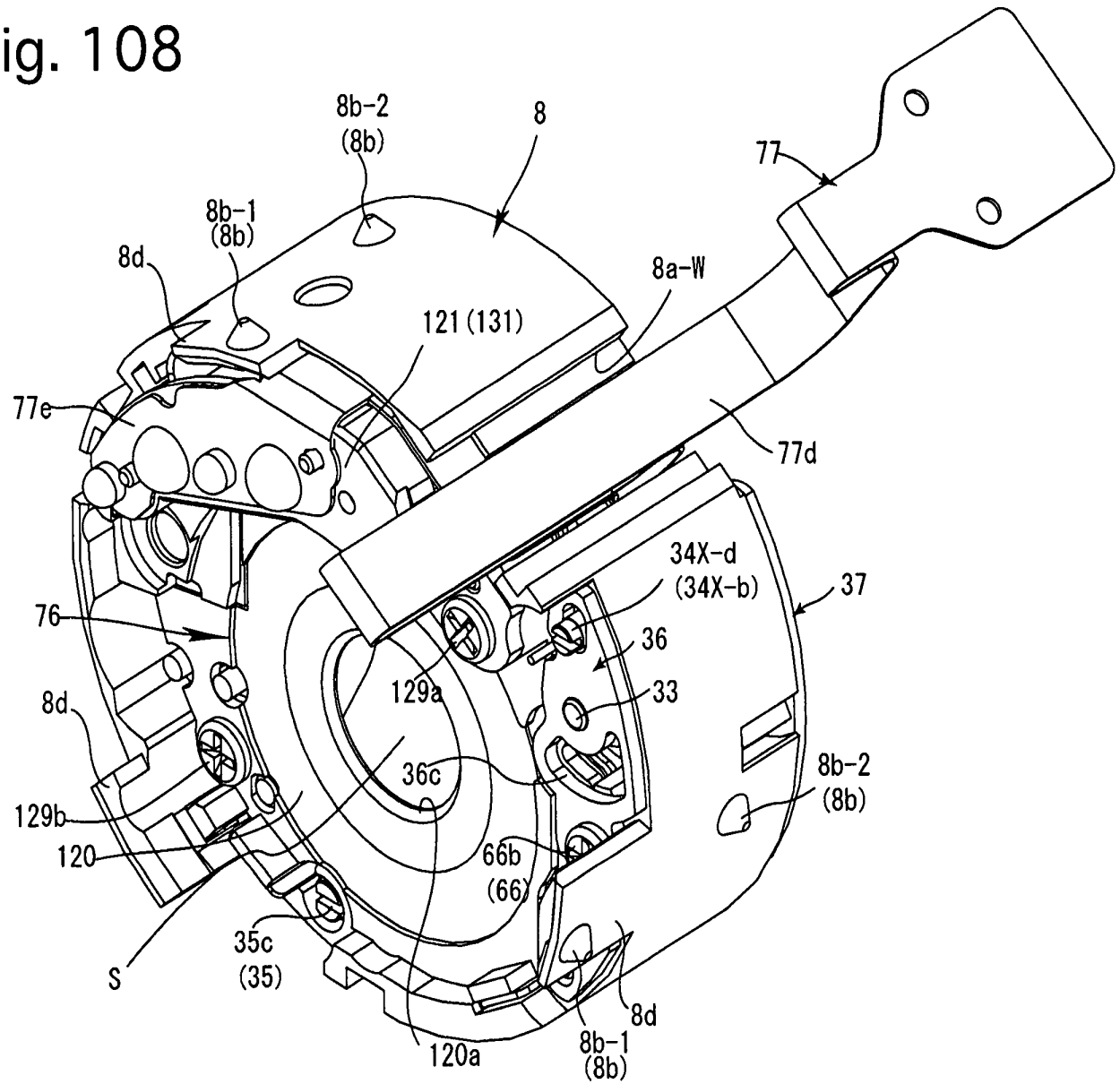

8b-2
(8b)
8
77
8b-1
(8b)
8d
8a-W
121 (131)
77e
77d
34X-d
(34X-b)
37
76
36
129a
33
8d
36c
8b-2
(8b)
129b
120
66b
(66)
35c
(35)
S
120a
8b-1
(8b)
8d

Fig. 109

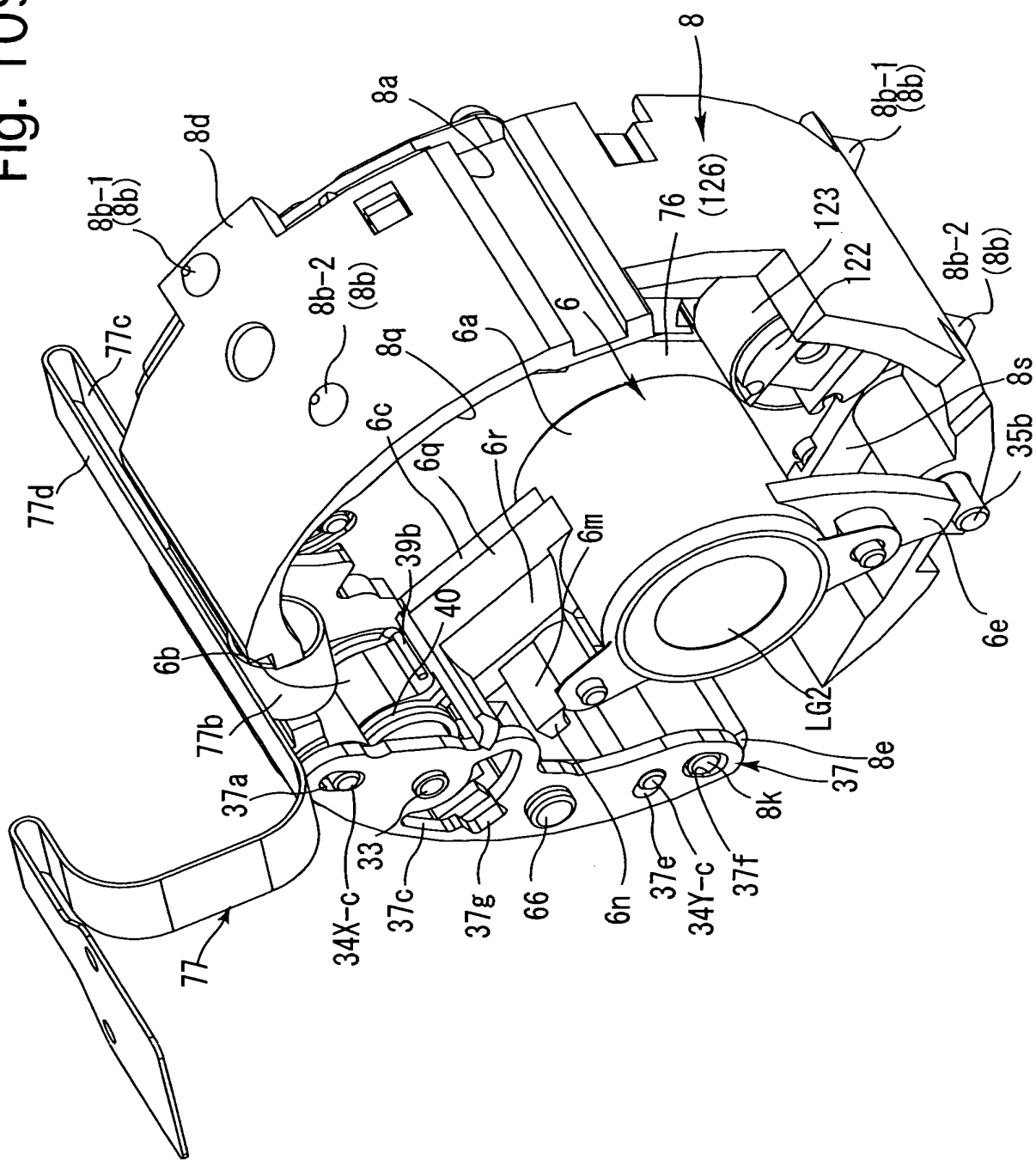

8
8a
8b-1 (8b)
8d
8b-2 (8b)
77c
77d
8q
6a
6
6c
6q
6r
39b
6m
40
6b
77b
37a
77
34X-c
33
37c
37g
66
6n
37e
34Y-c
37f
8k
37
8e
LG2
6e
35b
8s
8b-2 (8b)
122
123
76 (126)
8b-1 (8b)

Fig. 110

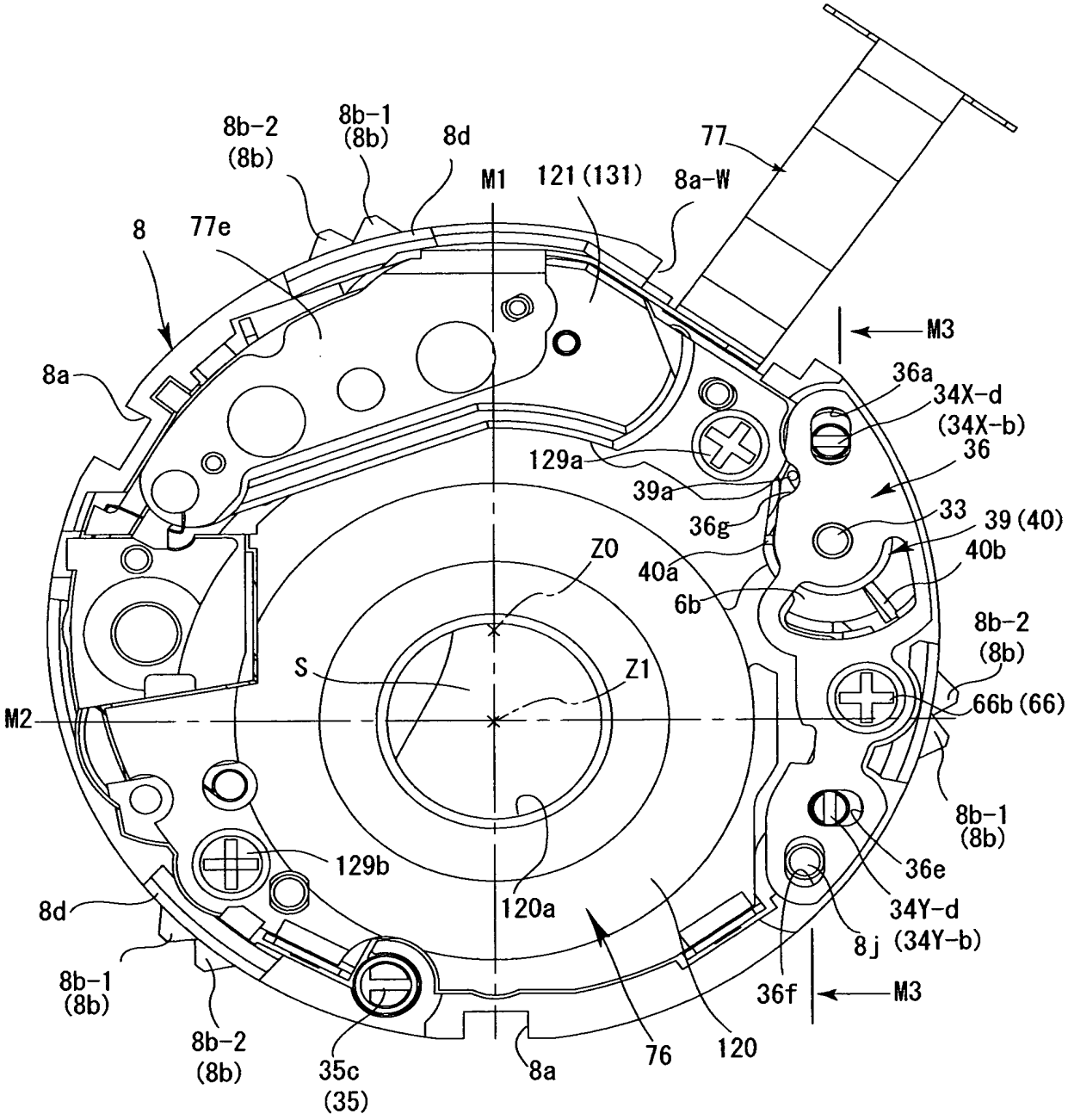

8b-2
(8b)
8b-1
(8b)
8d
M1
121 (131)
8a-W
77
8
77e
M3
8a
36a
34X-d
(34X-b)
36
129a
39a
36g
33
39 (40)
40b
Z0
40a
6b
8b-2
(8b)
S
Z1
M2
66b (66)
8b-1
(8b)
129b
36e
34Y-d
(34Y-b)
120a
8j
8d
8b-1
(8b)
36f
M3
8b-2
(8b)
35c
(35)
8a
76
120

Fig. 111

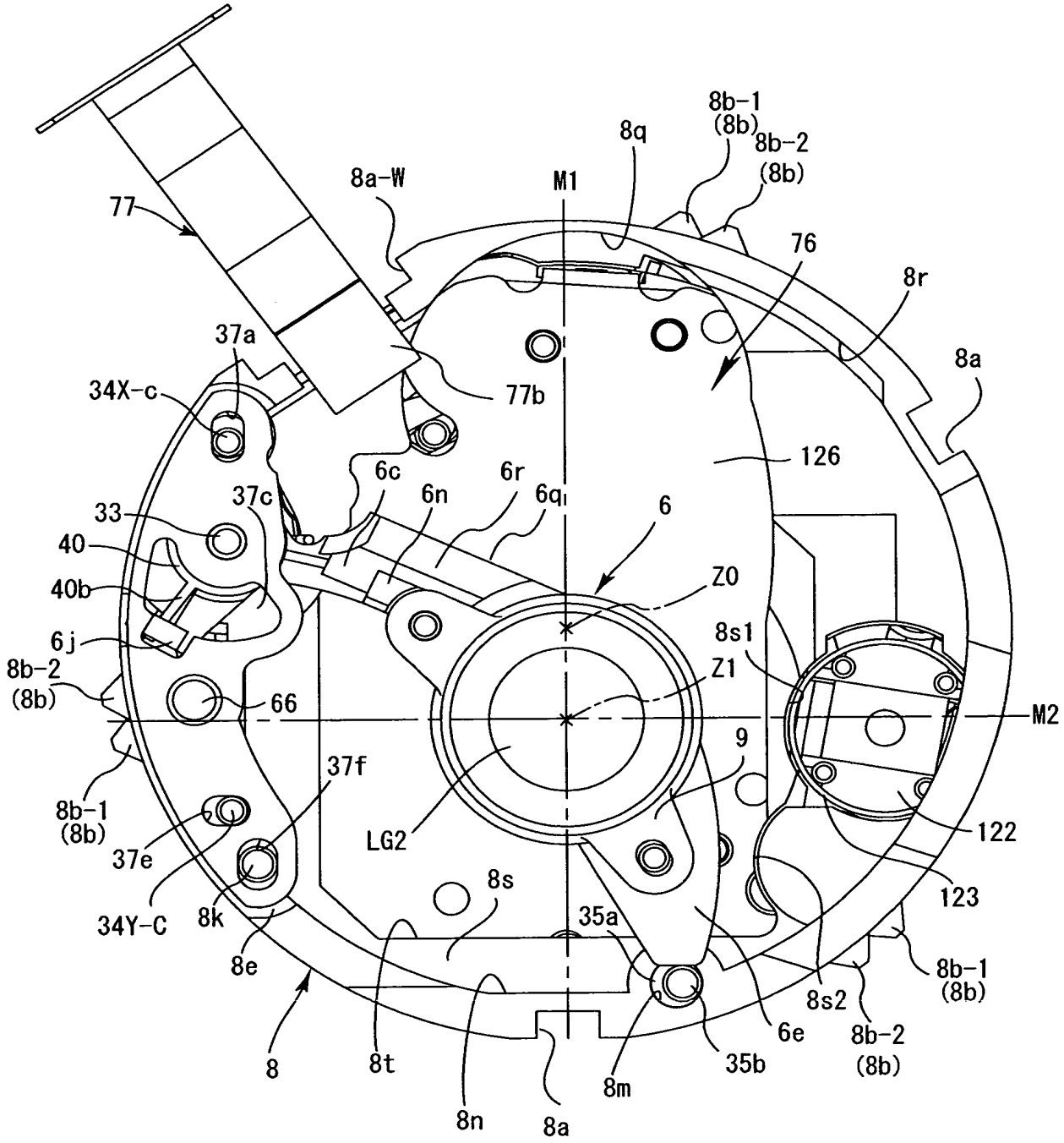

77
8a-W
M1
8q
8b-1
(8b)
8b-2
(8b)
76
8r
8a
37a
34X-c
77b
126
6c
6n
6r
6q
6
37c
33
40
40b
6j
8b-2
(8b)
66
Z0
8s1
Z1
M2
9
37f
LG2
122
123
8b-1
(8b)
37e
34Y-C
8k
8e
8s
35a
8s2
8b-2
(8b)
8b-1
(8b)
6e
35b
8
8t
8n
8a
8m

Fig. 112

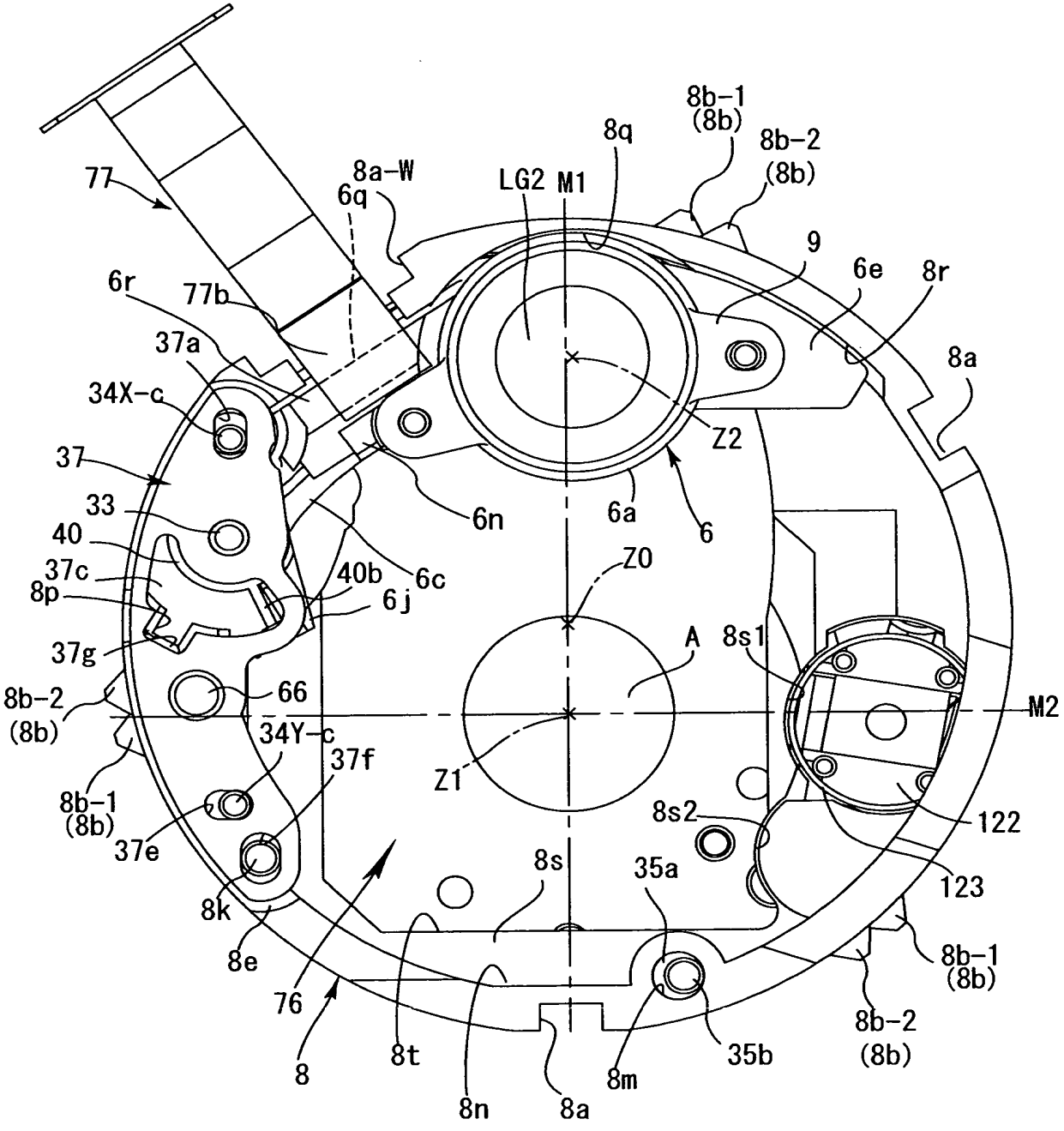

77
8a-W
6q
LG2
M1
8q
8b-1
(8b)
8b-2
(8b)
9
6e
8r
8a
6r
77b
37a
34X-c
37
33
40
37c
8p
37g
8b-2
(8b)
8b-1
(8b)
37e
8k
8e
76
8
8t
8n
8a
8m
35b
8b-2
(8b)
8b-1
(8b)
123
122
8s2
35a
8s
66
34Y-c
37f
Z1
A
8s1
M2
Z0
6n
6a
6
Z2
6c
40b
6j

Fig.113

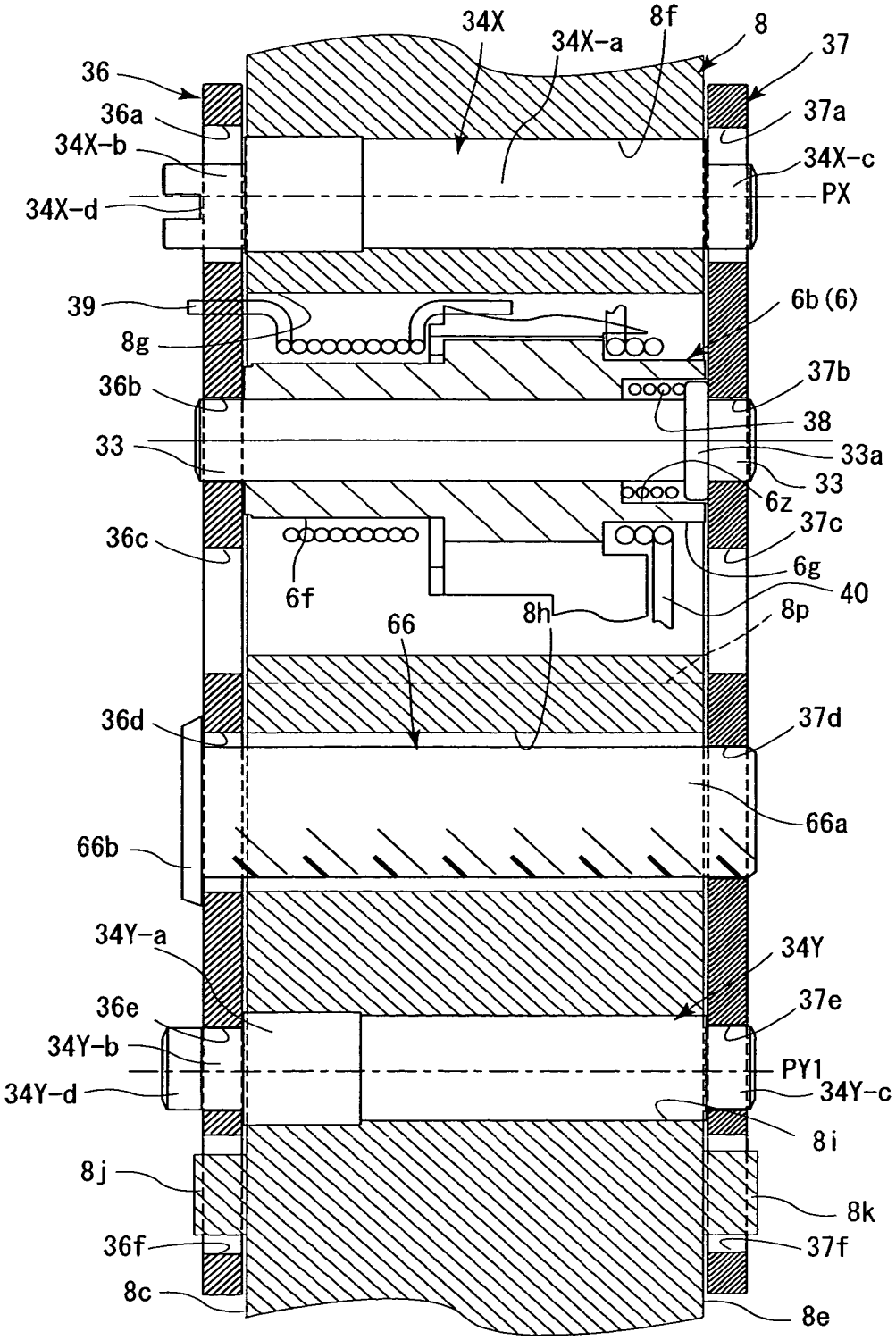

34X
34X-a
8f
8
37
36
36a
37a
34X-b
34X-c
34X-d
PX
39
6b (6)
8g
37b
36b
38
33
33a
33
6z
37c
36c
6g
6f
40
8h
66
8p
36d
37d
66a
66b
34Y-a
34Y
36e
37e
34Y-b
PY1
34Y-d
34Y-c
8i
8j
8k
36f
37f
8c
8e

Fig . 114

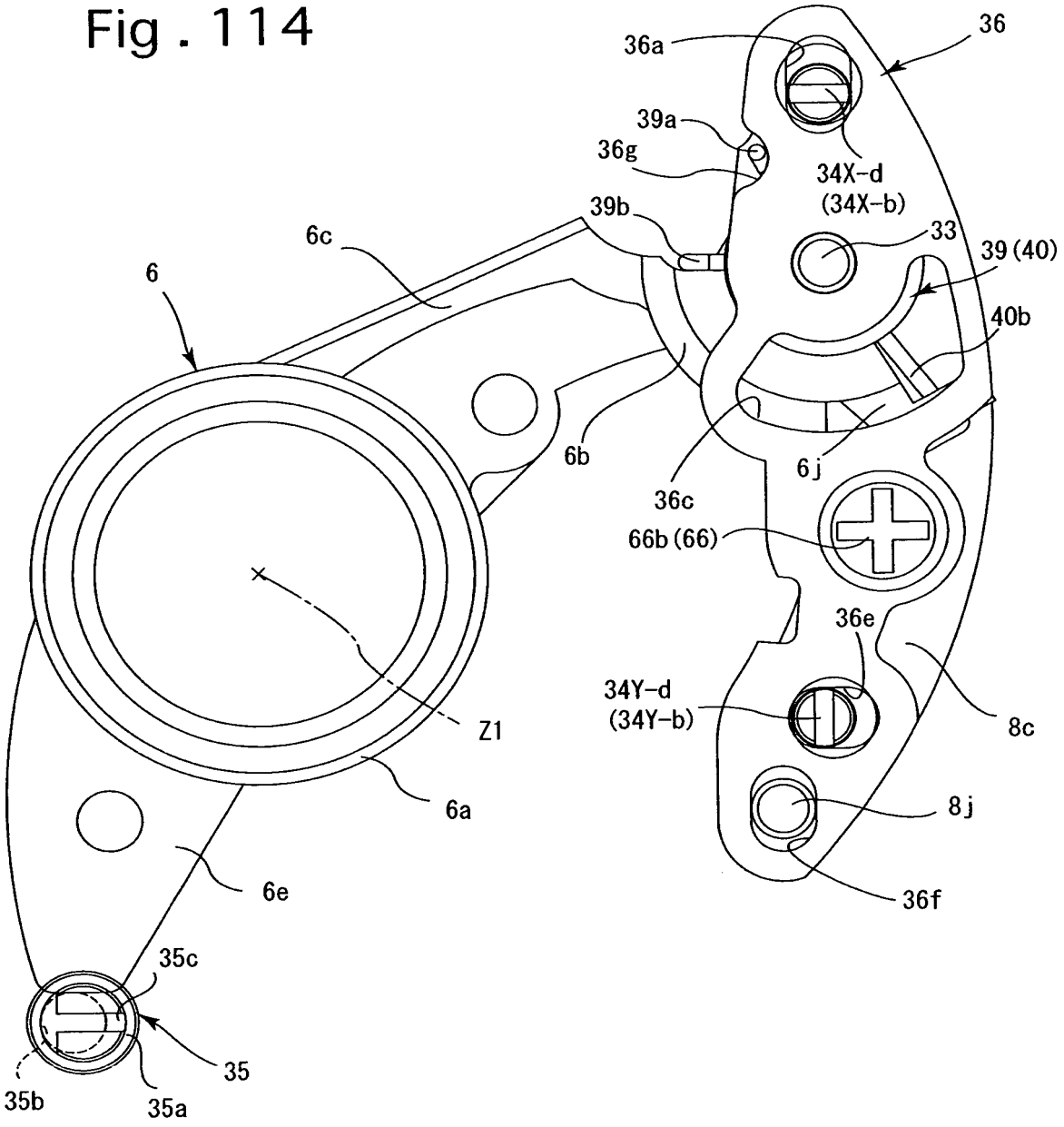

36
36a
39a
36g
34X-d
(34X-b)
39b
33
39 (40)
6c
6
40b
6b
6j
36c
66b (66)
36e
34Y-d
(34Y-b)
8c
Z1
6a
8j
6e
36f
35c
35
35b
35a

Fig . 115

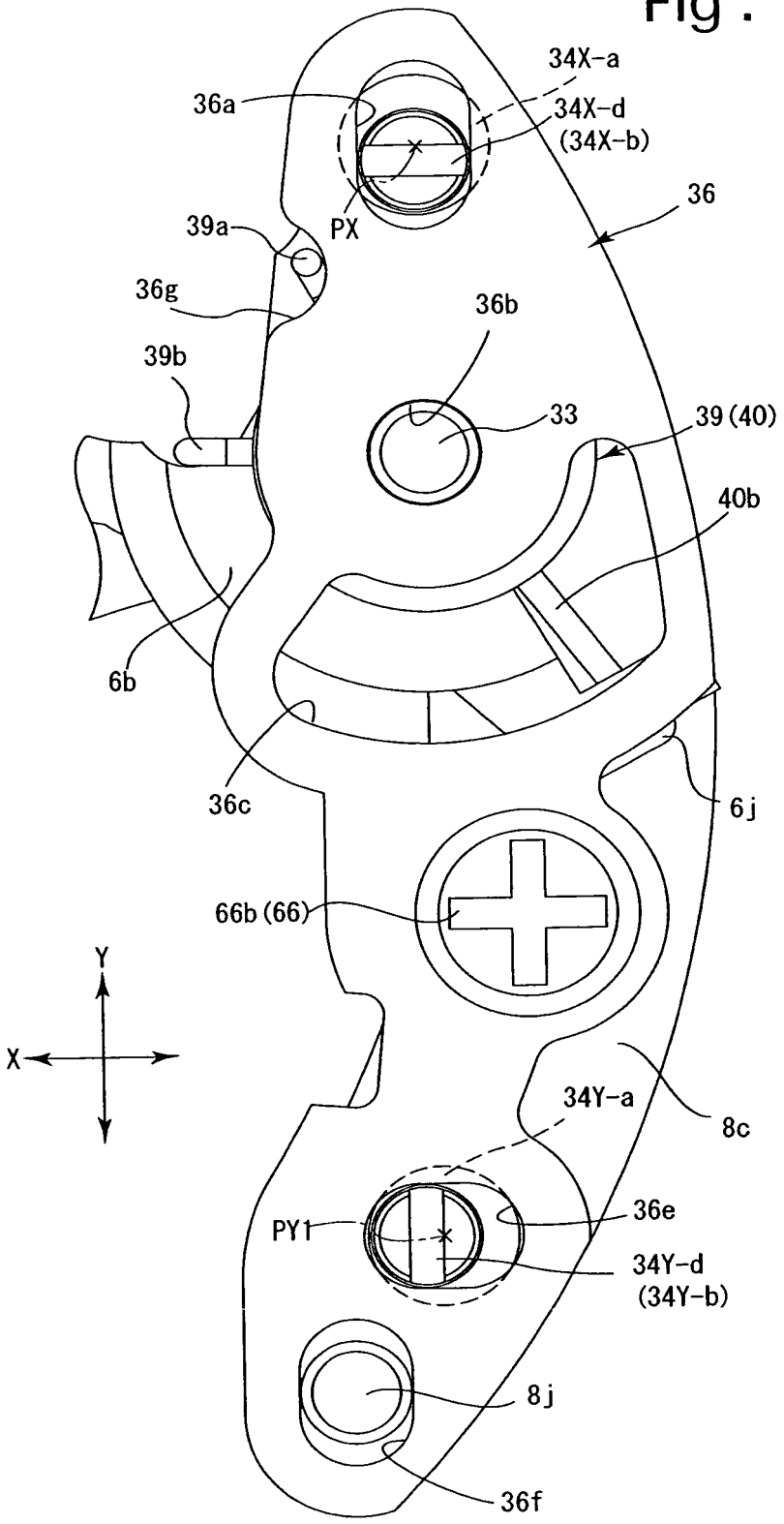

34X-a
36a
34X-d
(34X-b)
36
PX
39a
36g
36b
39b
33
39 (40)
40b
6b
36c
6j
66b (66)
Y
X
34Y-a
8c
PY1
36e
34Y-d
(34Y-b)
8j
36f

Fig . 116

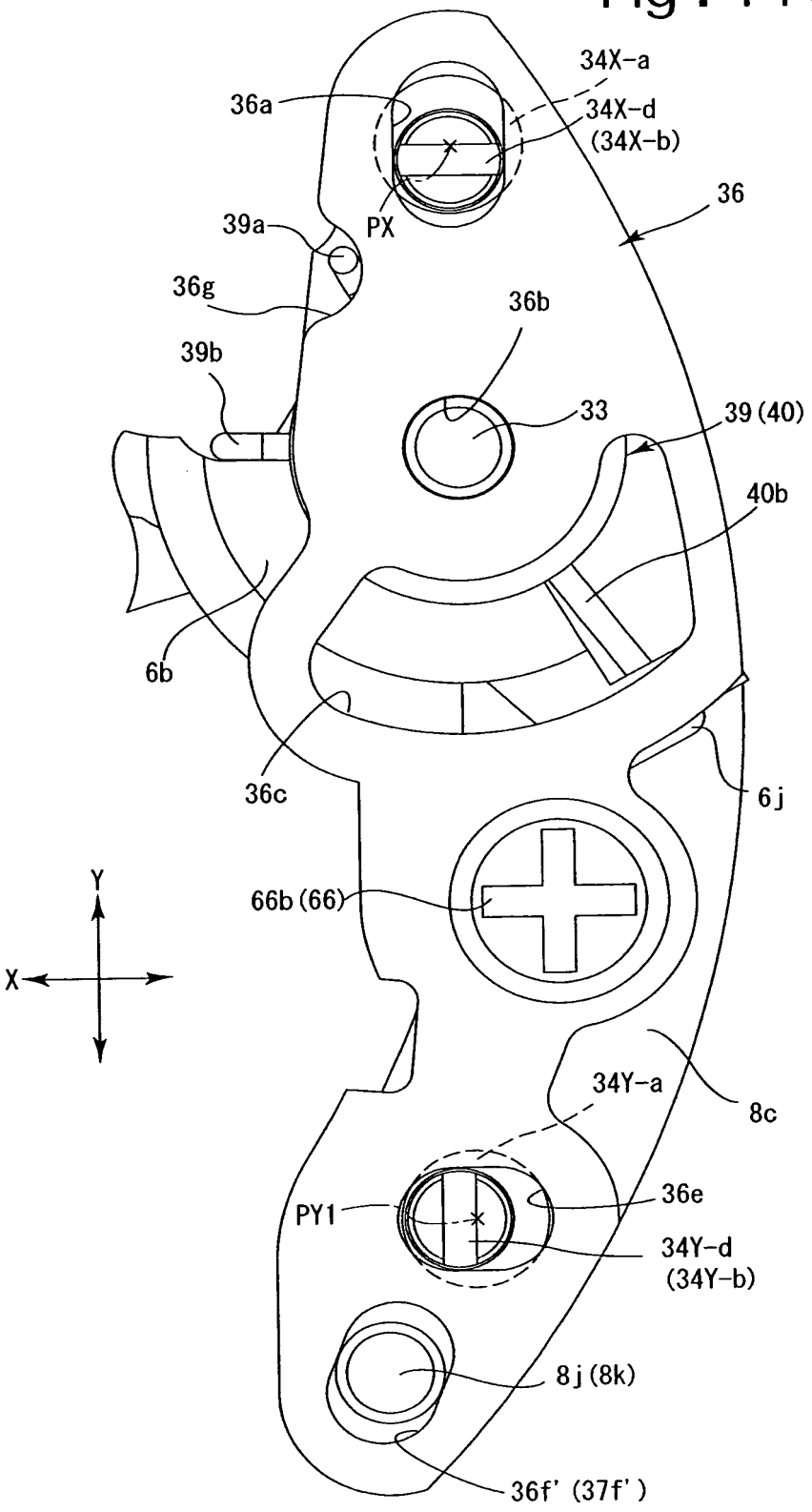

34X-a
36a
34X-d
(34X-b)
36
PX
39a
36g
36b
39b
33
39 (40)
40b
6b
36c
6j
Y
66b (66)
X
34Y-a
8c
PY1
36e
34Y-d
(34Y-b)
8j (8k)
36f' (37f')

Fig . 117

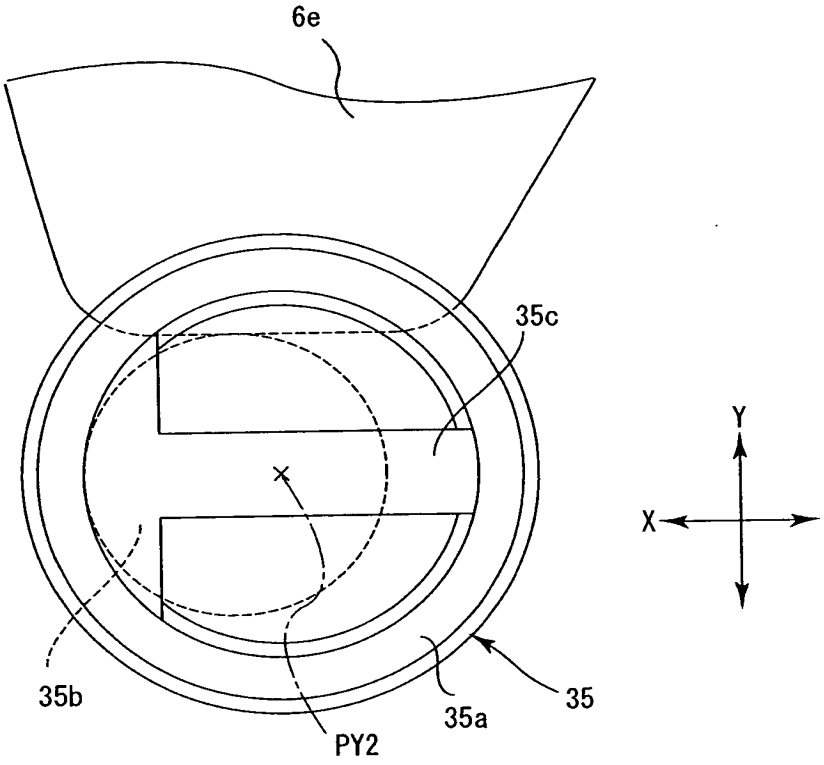


Fig . 118

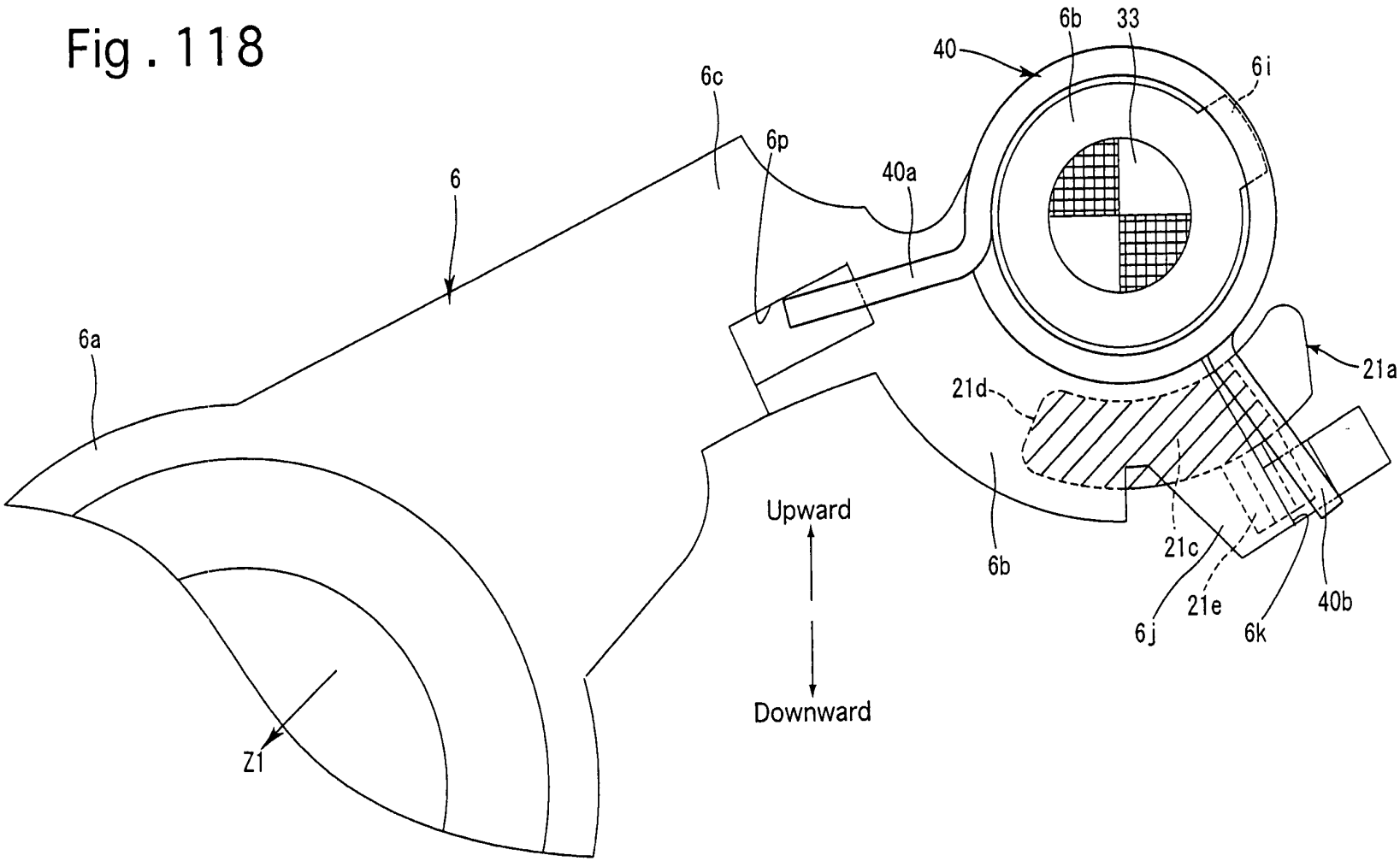

6b
33
40
6i
6c
6p
40a
6
6a
21a
21d
Upward
6b
21c
21e
40b
6j
6k
Downward
Z1

Fig . 119

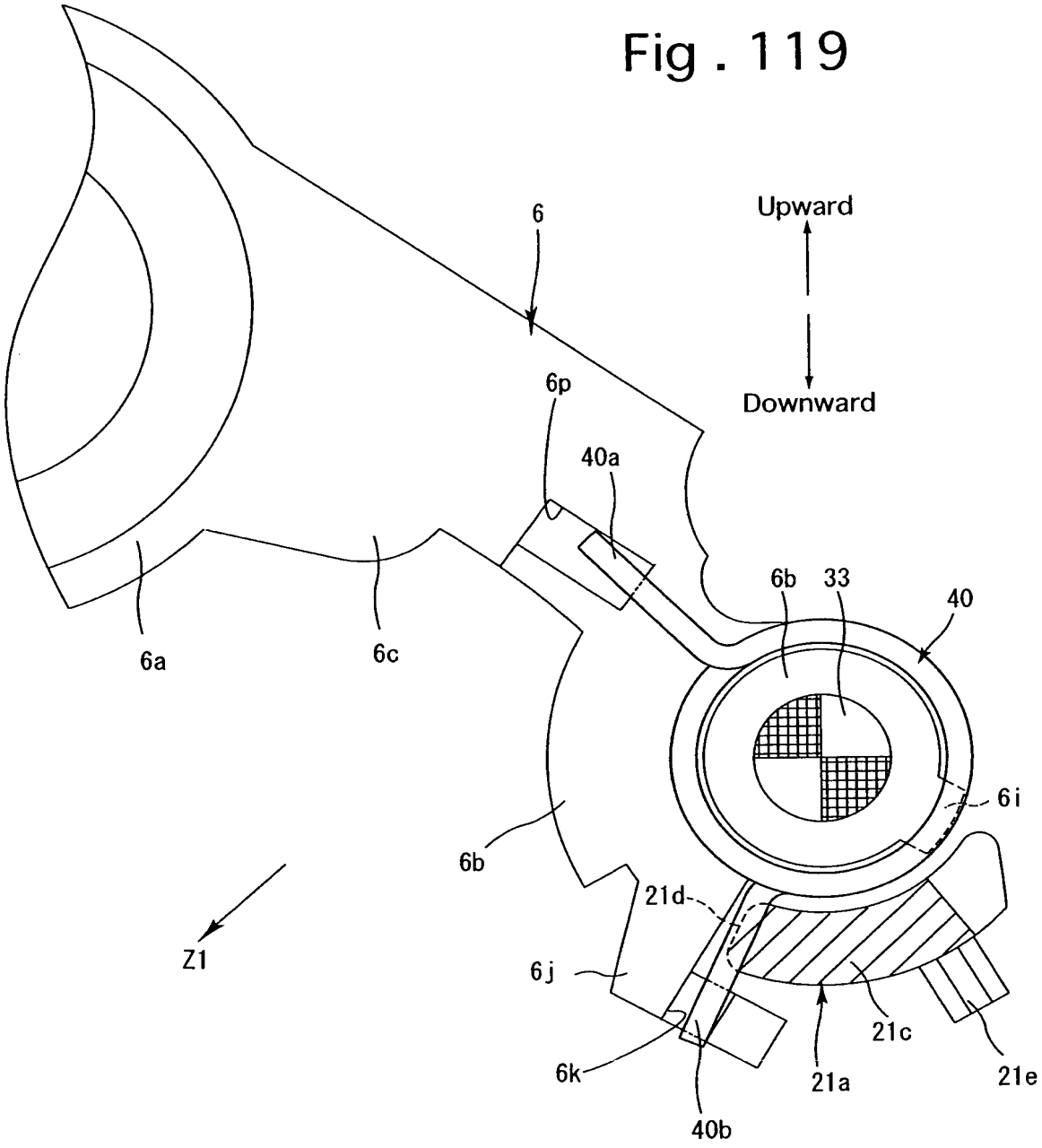

6
Upward
Downward
6p
40a
6b
33
40
6a
6c
6i
6b
21d
Z1
6j
21c
6k
21a
21e
40b

Fig . 120

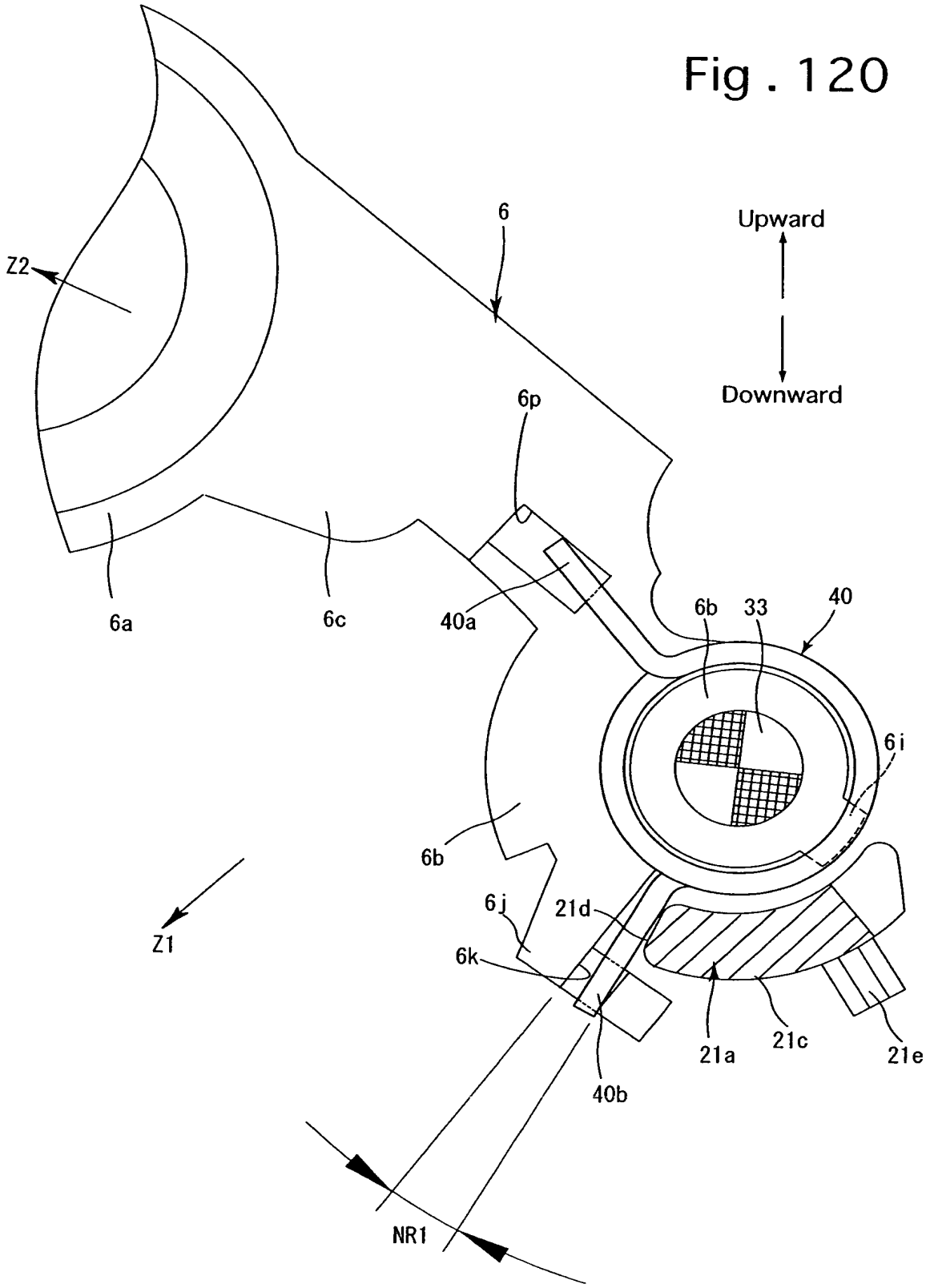

6
Upward
Downward
Z2
6p
6a
6c
40a
6b
33
40
6i
6b
Z1
6j
21d
6k
21a
21c
21e
40b
NR1

Fig . 121

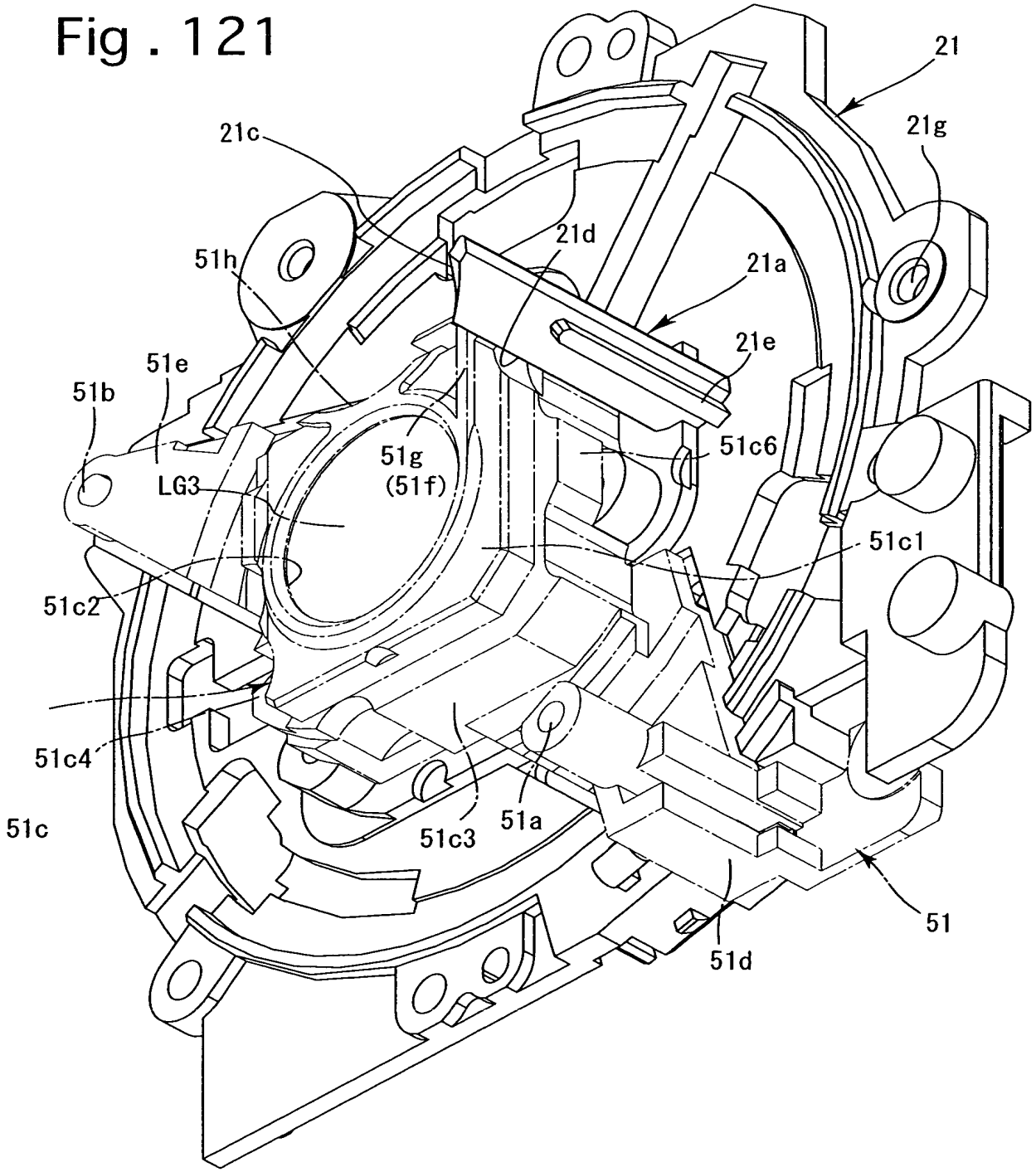

21
21c
21g
21d
51h
21a
21e
51e
51b
51g
(51f)
51c6
LG3
51c1
51c2
51c4
51c
51c3
51a
51
51d

Fig. 122

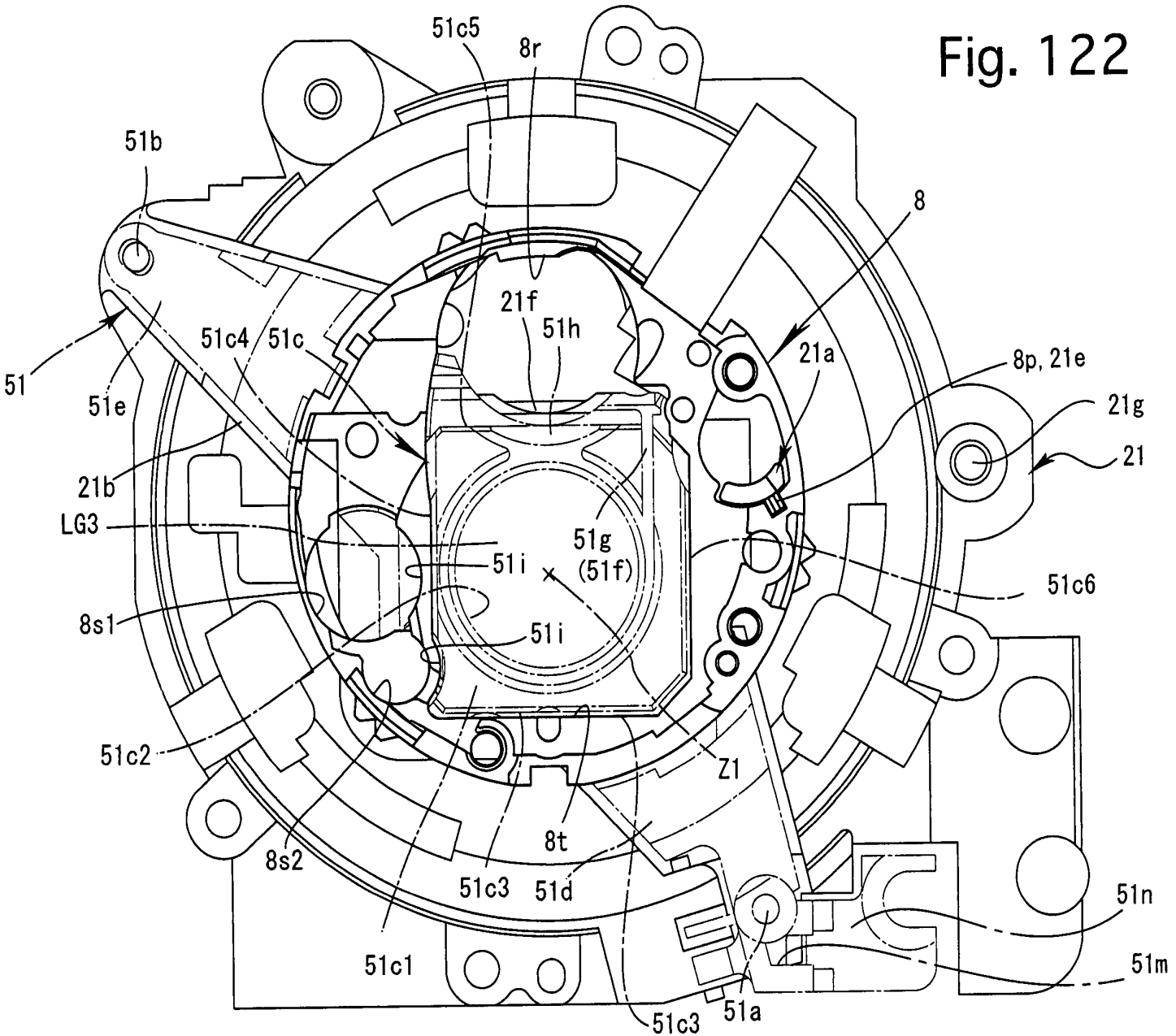

51c5
8r
51b
8
21f
51h
51c4
51c
21a
8p, 21e
51
51e
21g
21
21b
LG3
51g
(51f)
51i
51c6
8s1
51i
51c2
Z1
8t
8s2
51c3
51d
51n
51c1
51m
51c3
51a

Fig . 123

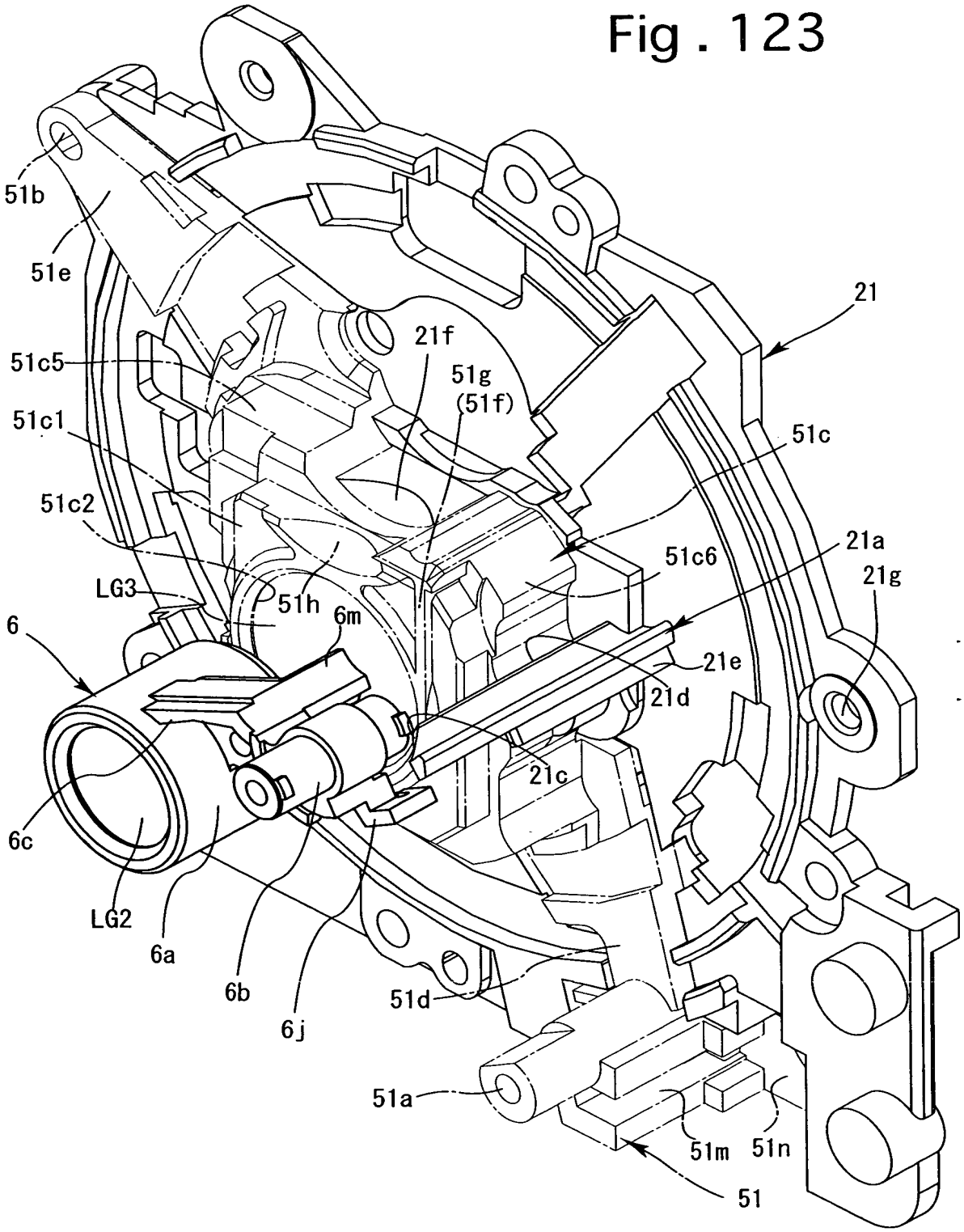

51b
51e
21
21f
51g
(51f)
51c5
51c1
51c
51c2
21a
51c6
21g
LG3
51h
6m
6
21e
21d
21c
6c
LG2
6a
6b
6j
51d
51a
51m
51n
51

Fig . 124

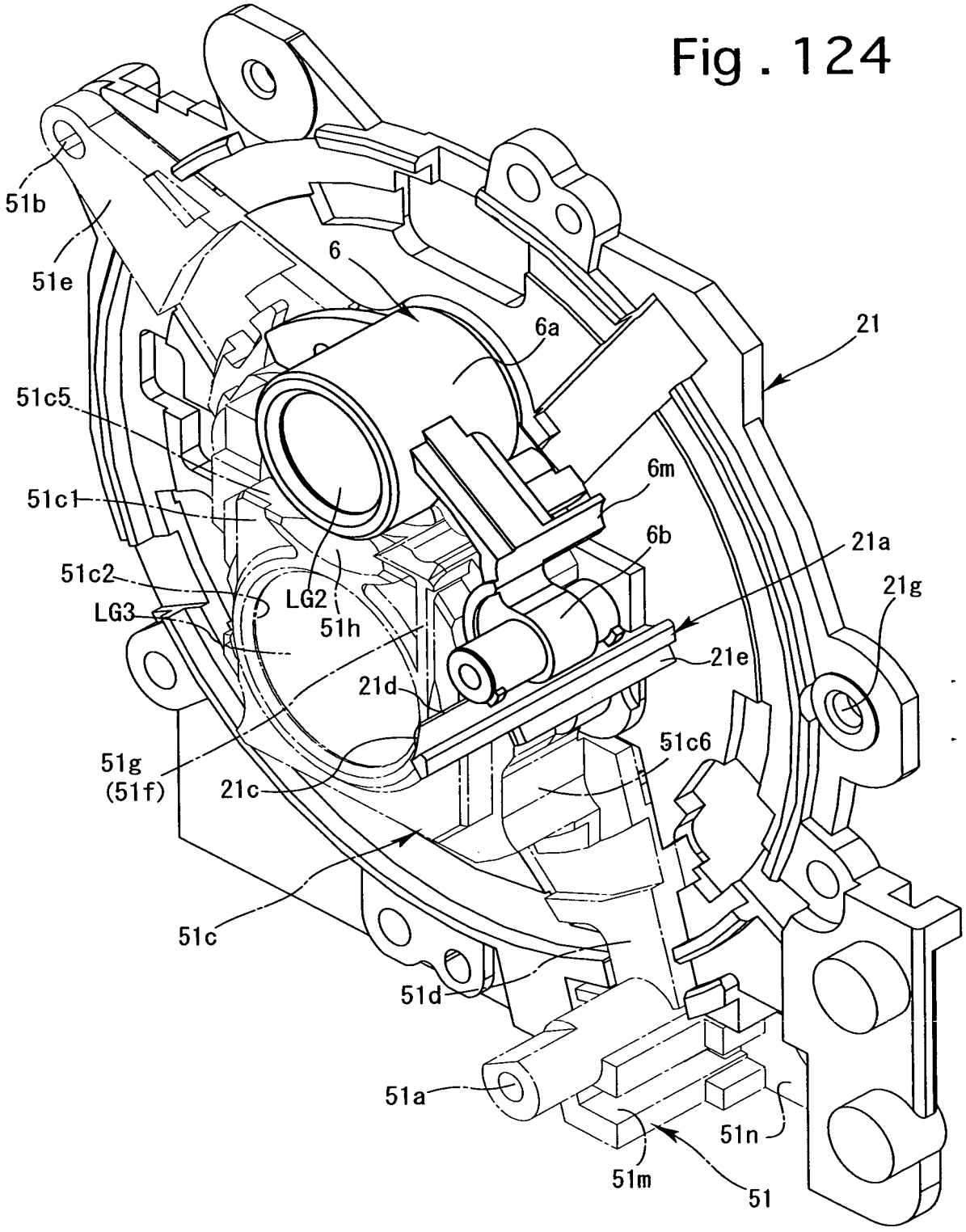

51b
51e
6
6a
21
51c5
6m
51c1
6b
21a
51c2
LG3
LG2
51h
21g
21e
21d
51g
(51f)
21c
51c6
51c
51d
51a
51n
51m
51

Fig. 125

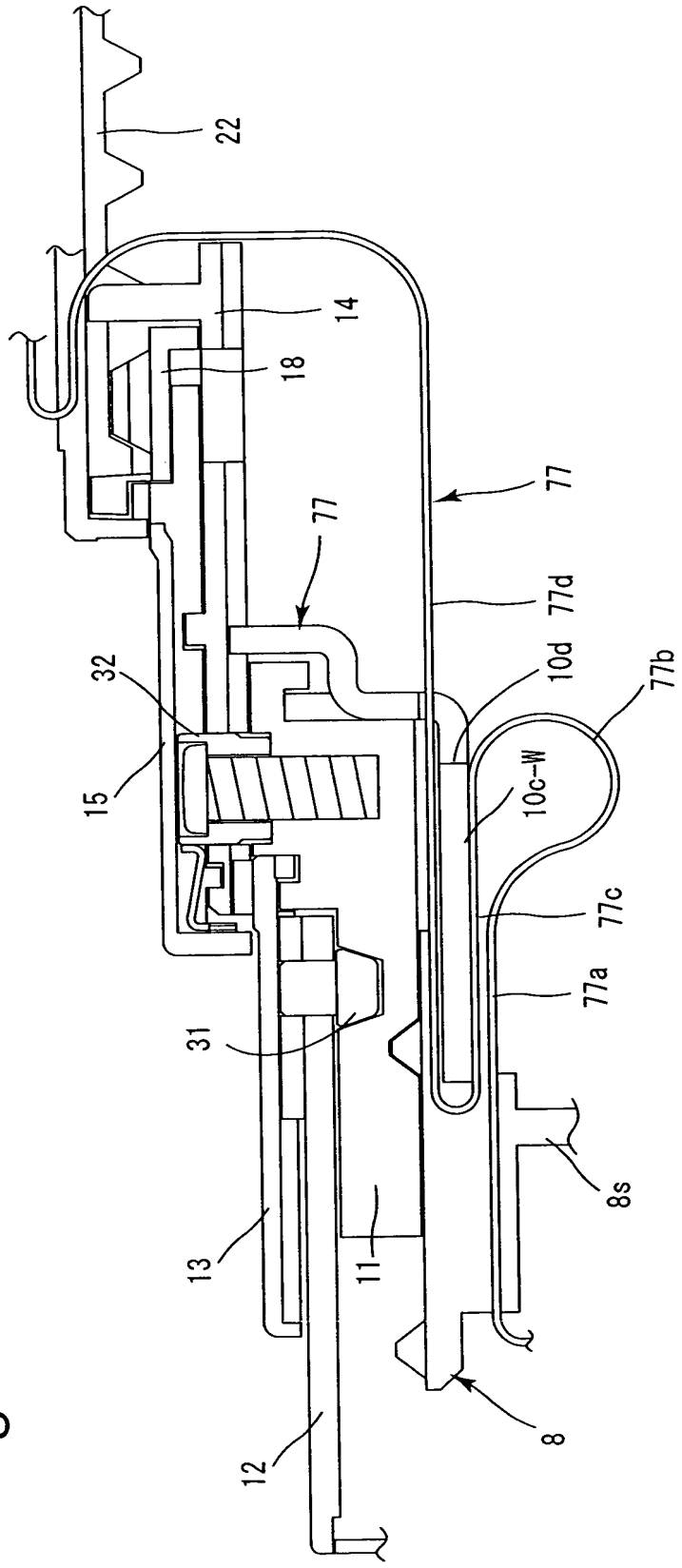


Fig . 126

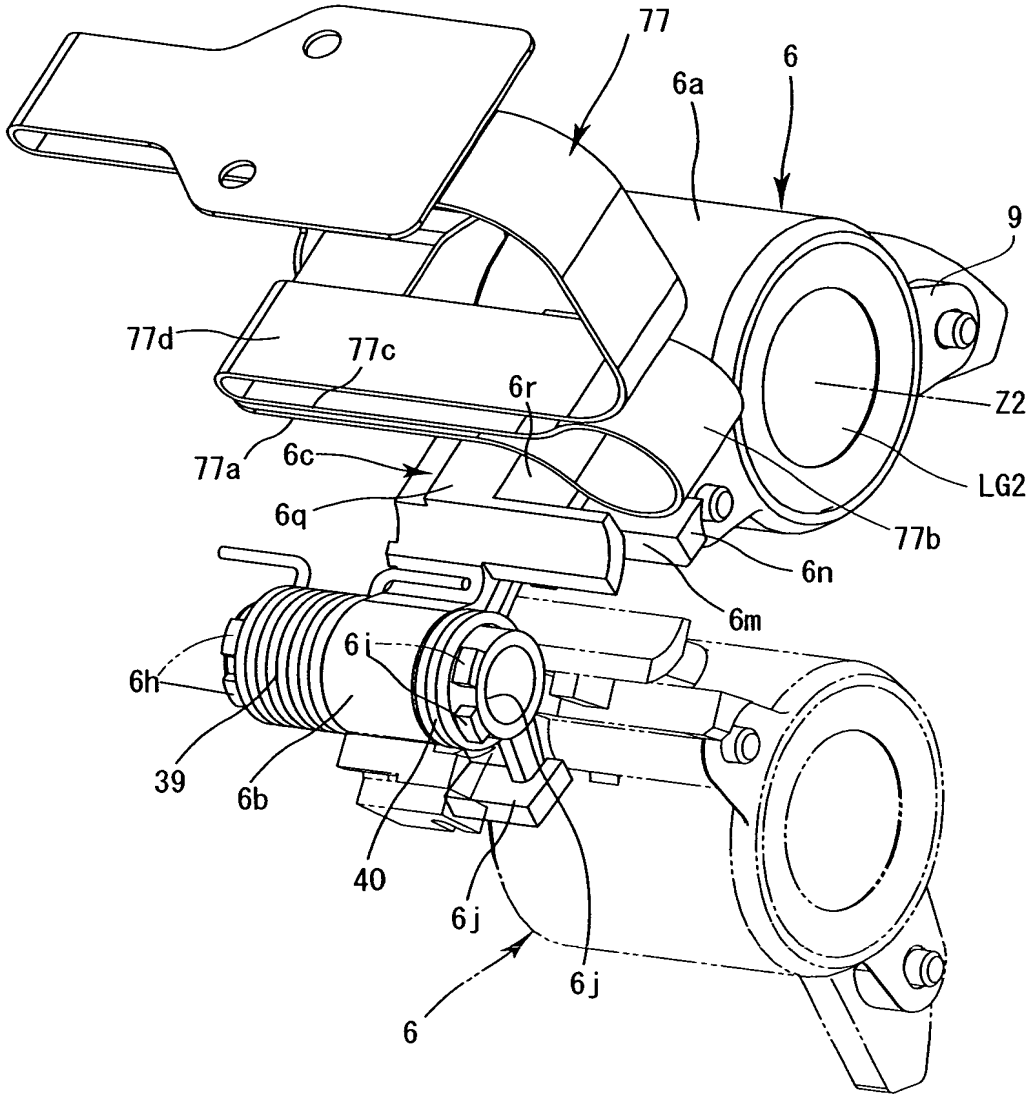


Fig . 127

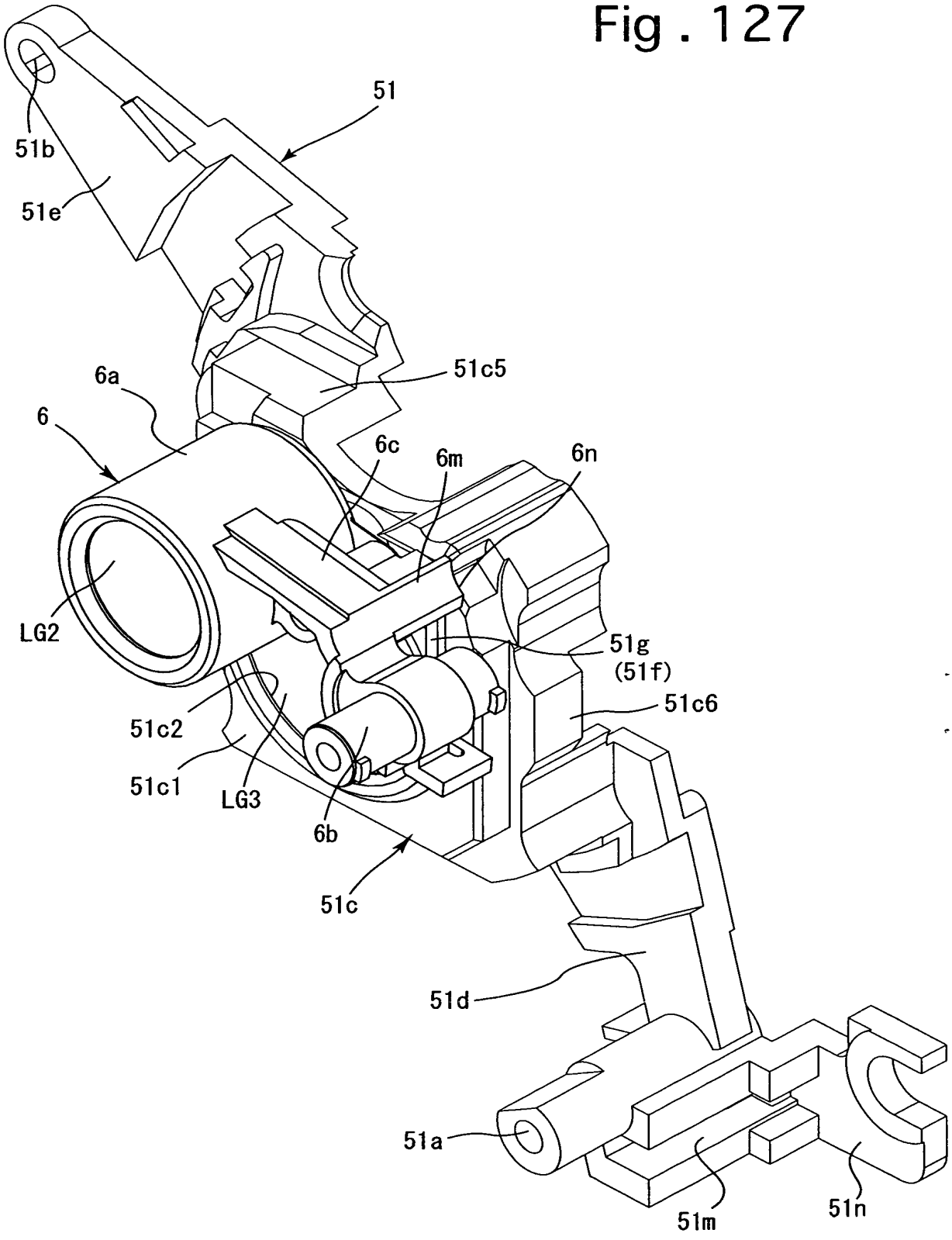

51
51b
51e
6a
6
51c5
6c
6m
6n
LG2
51g
(51f)
51c6
51c2
51c1
LG3
6b
51c
51d
51a
51m
51n

Fig . 128

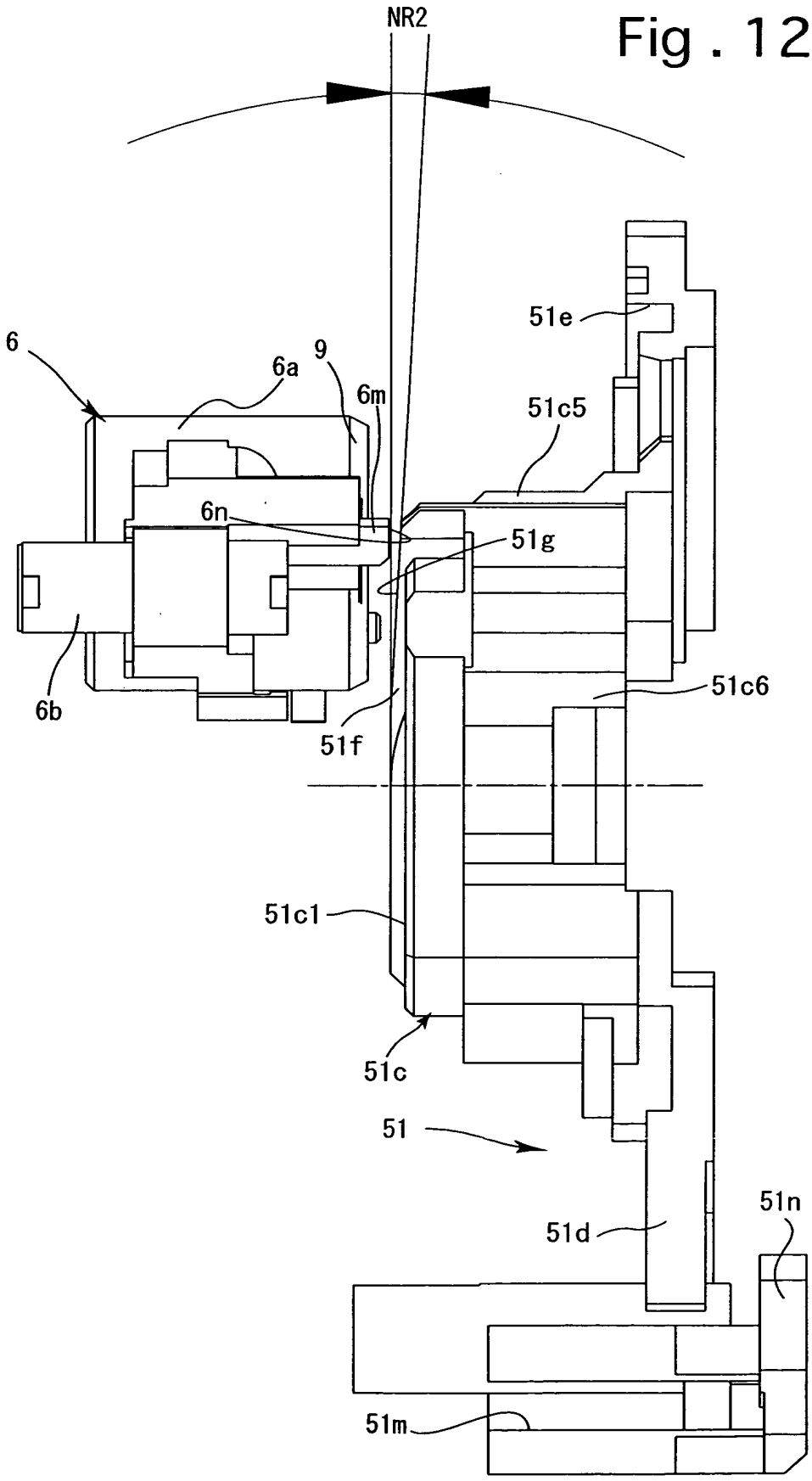


Fig . 129

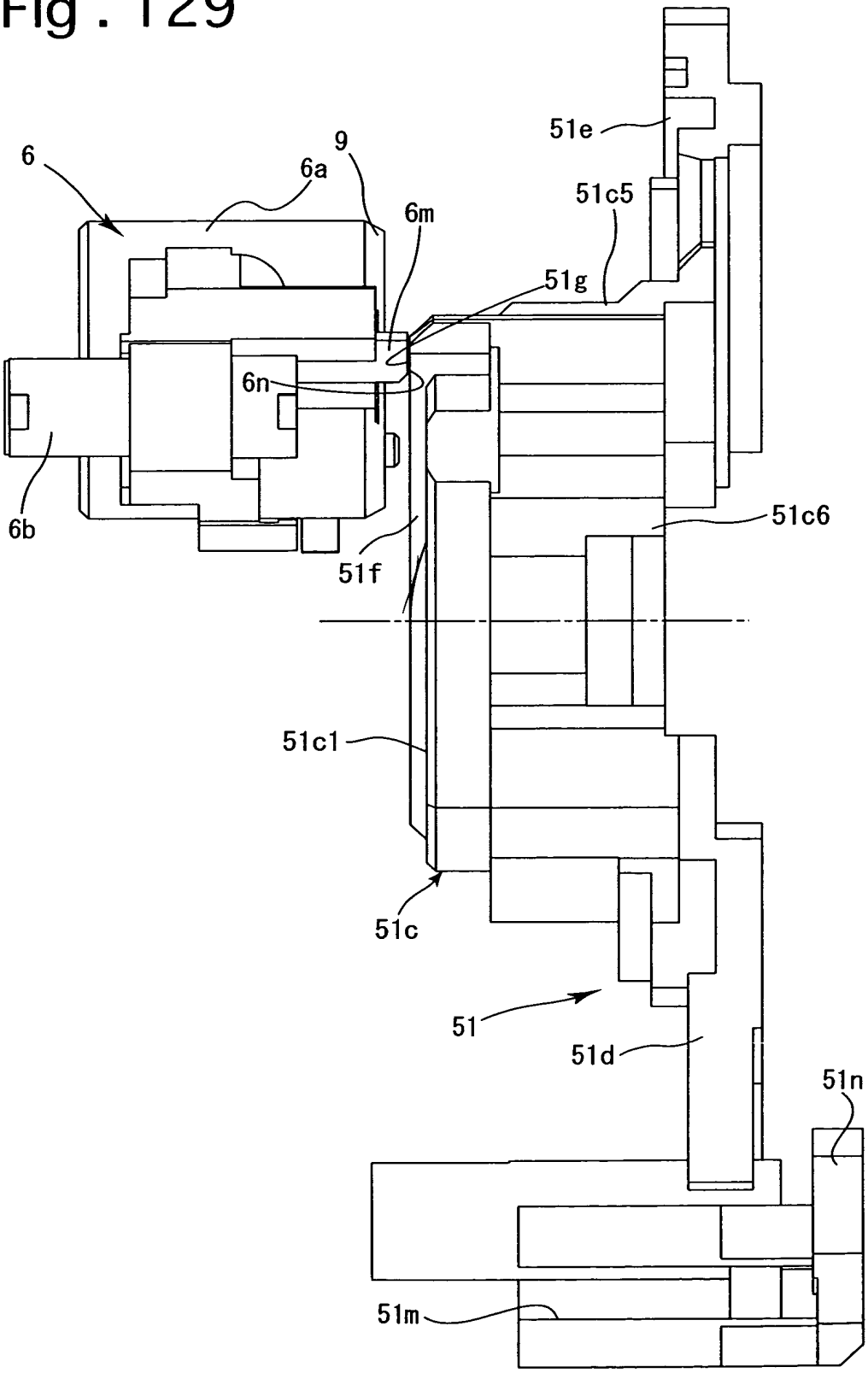


Fig. 130

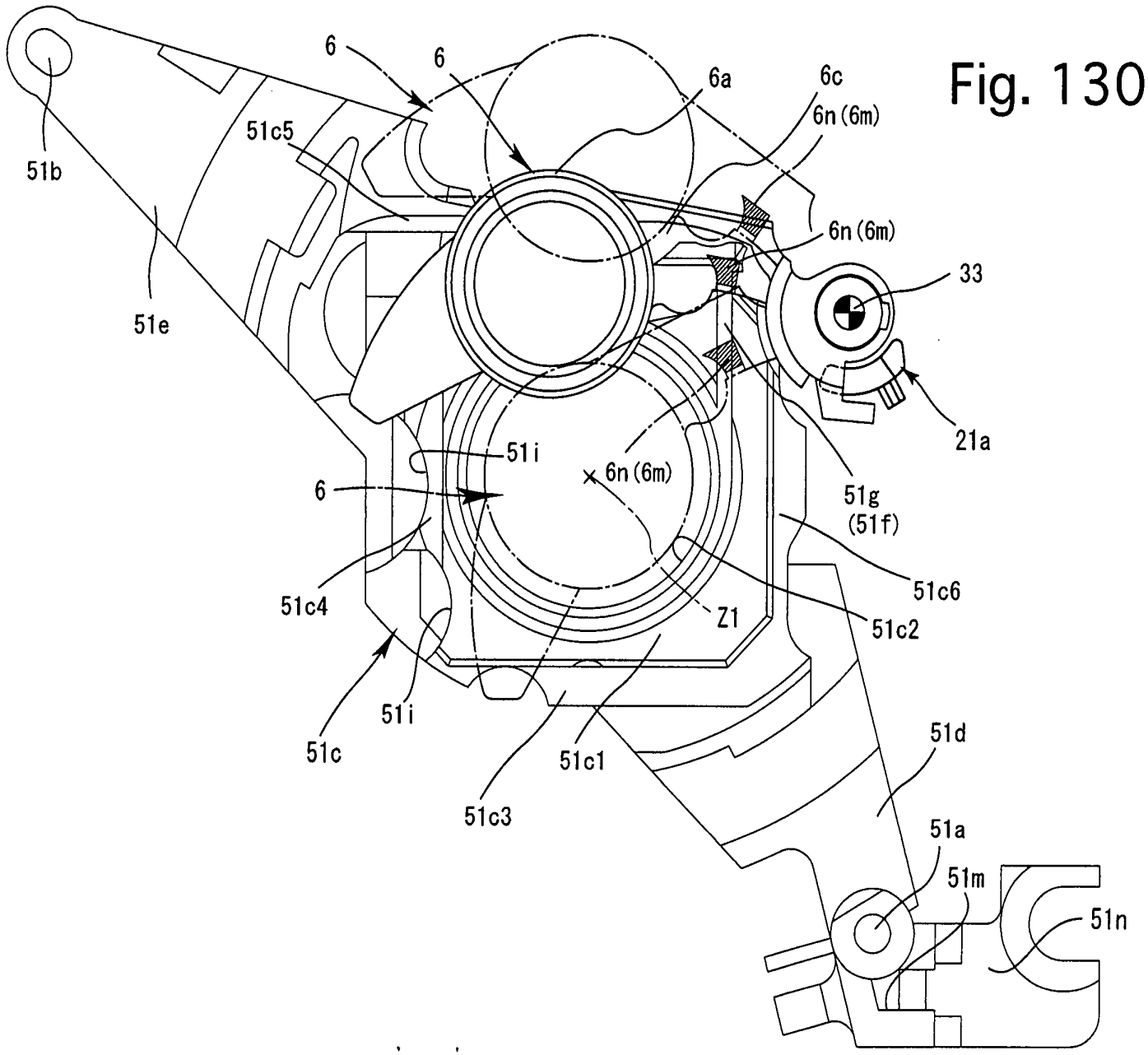

6
6
6a
6c
6n (6m)
51c5
51b
6n (6m)
33
51e
21a
51i
6n (6m)
6
51g
(51f)
51c6
51c4
Z1
51c2
51i
51c
51c1
51d
51c3
51a
51m
51n

Fig. 131

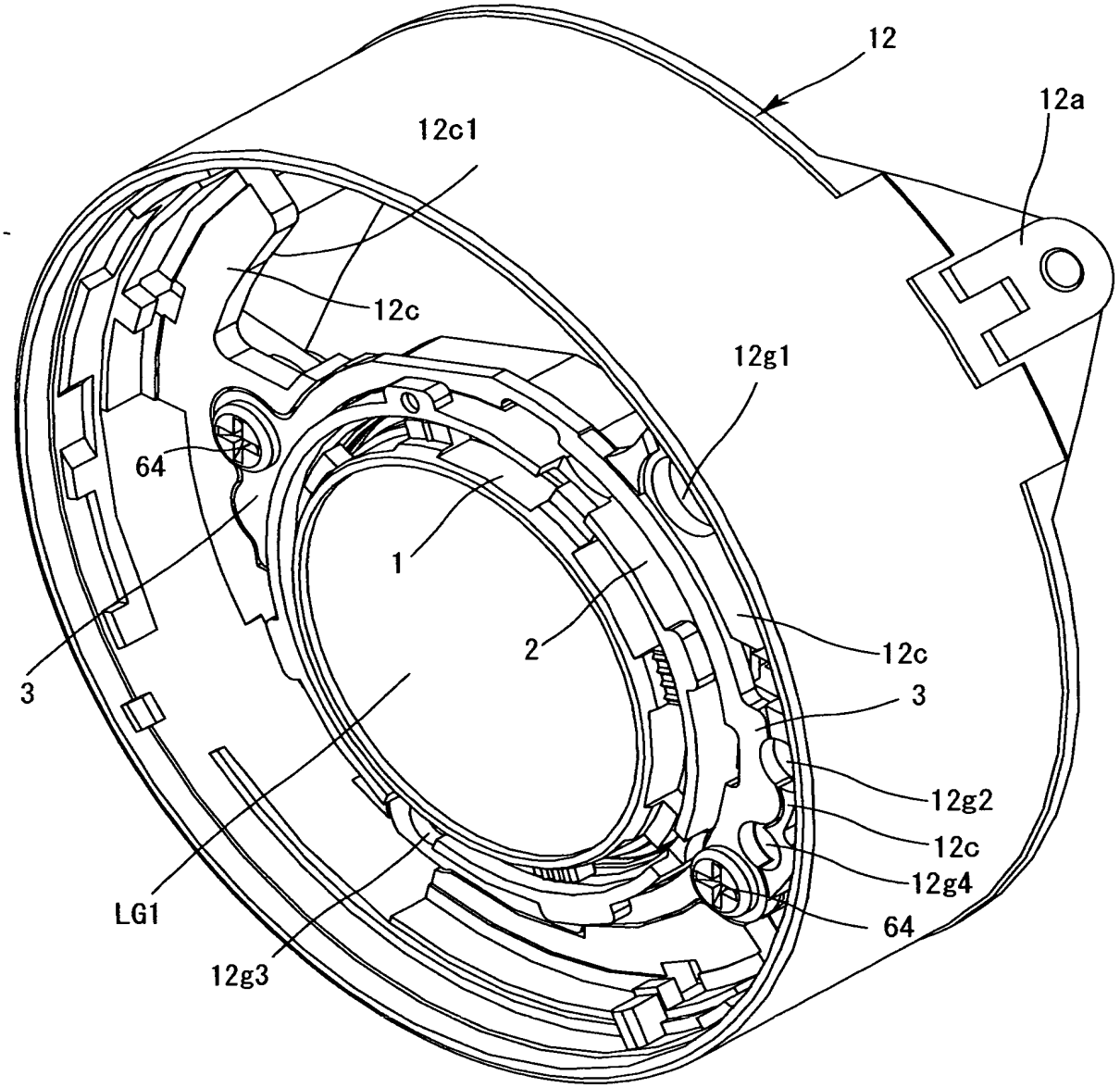


Fig. 132

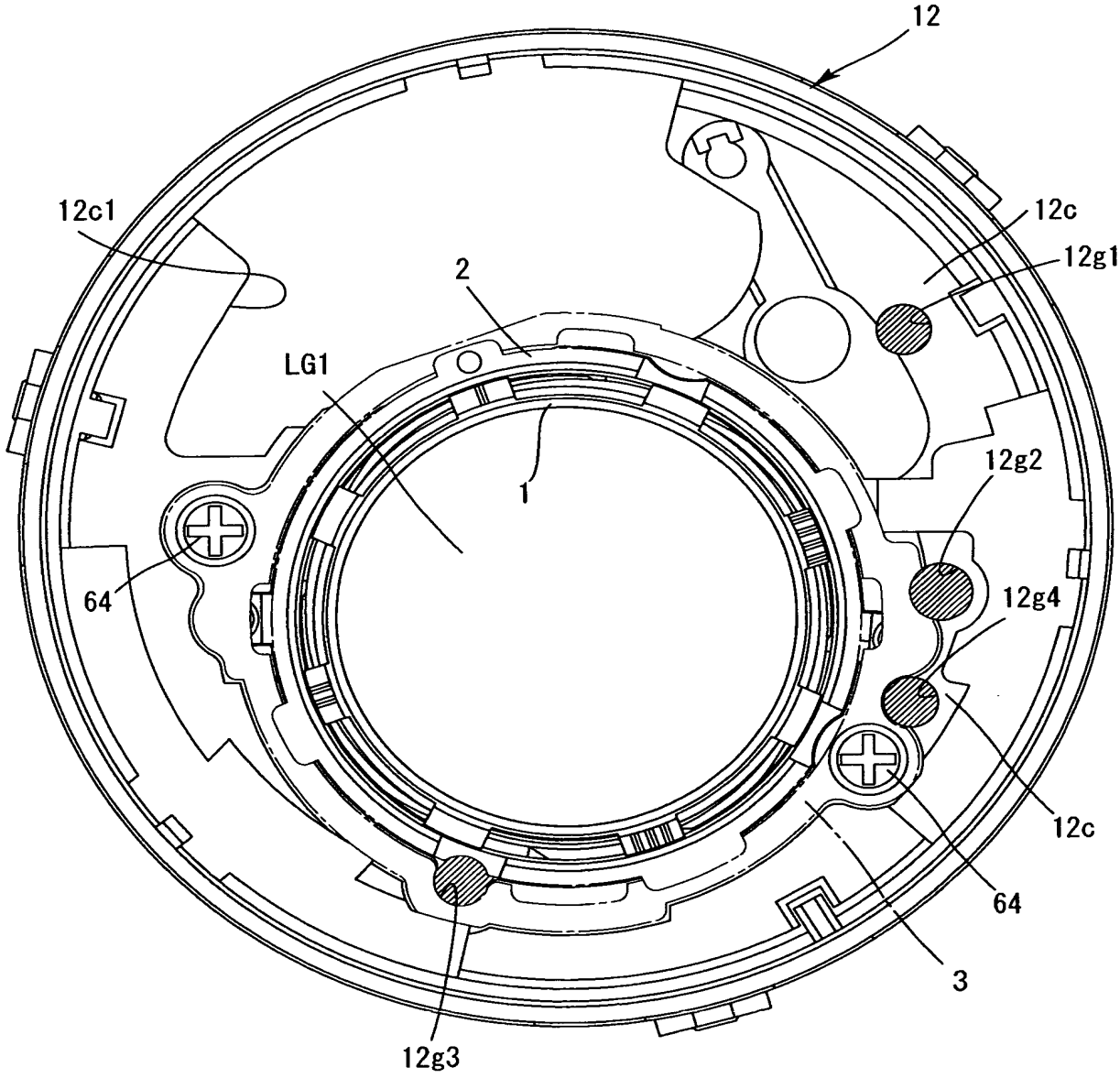


Fig. 133

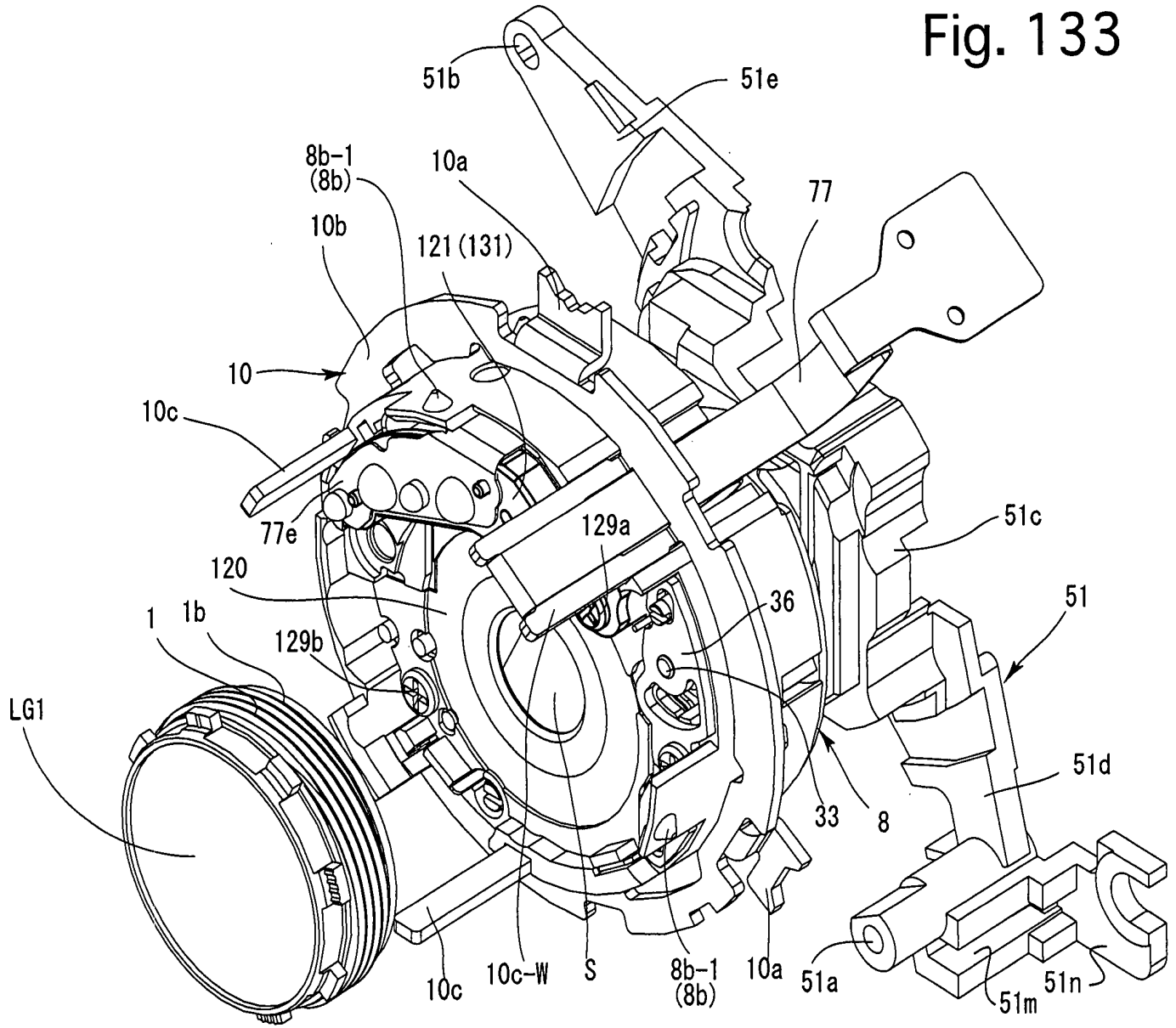

51b
51e
8b-1
(8b)
10a
77
10b
121 (131)
10
10c
77e
129a
51c
120
36
51
1
1b
129b
LG1
33
8
51d
10c
10c-W
S
8b-1
(8b)
10a
51a
51m
51n

Fig. 134

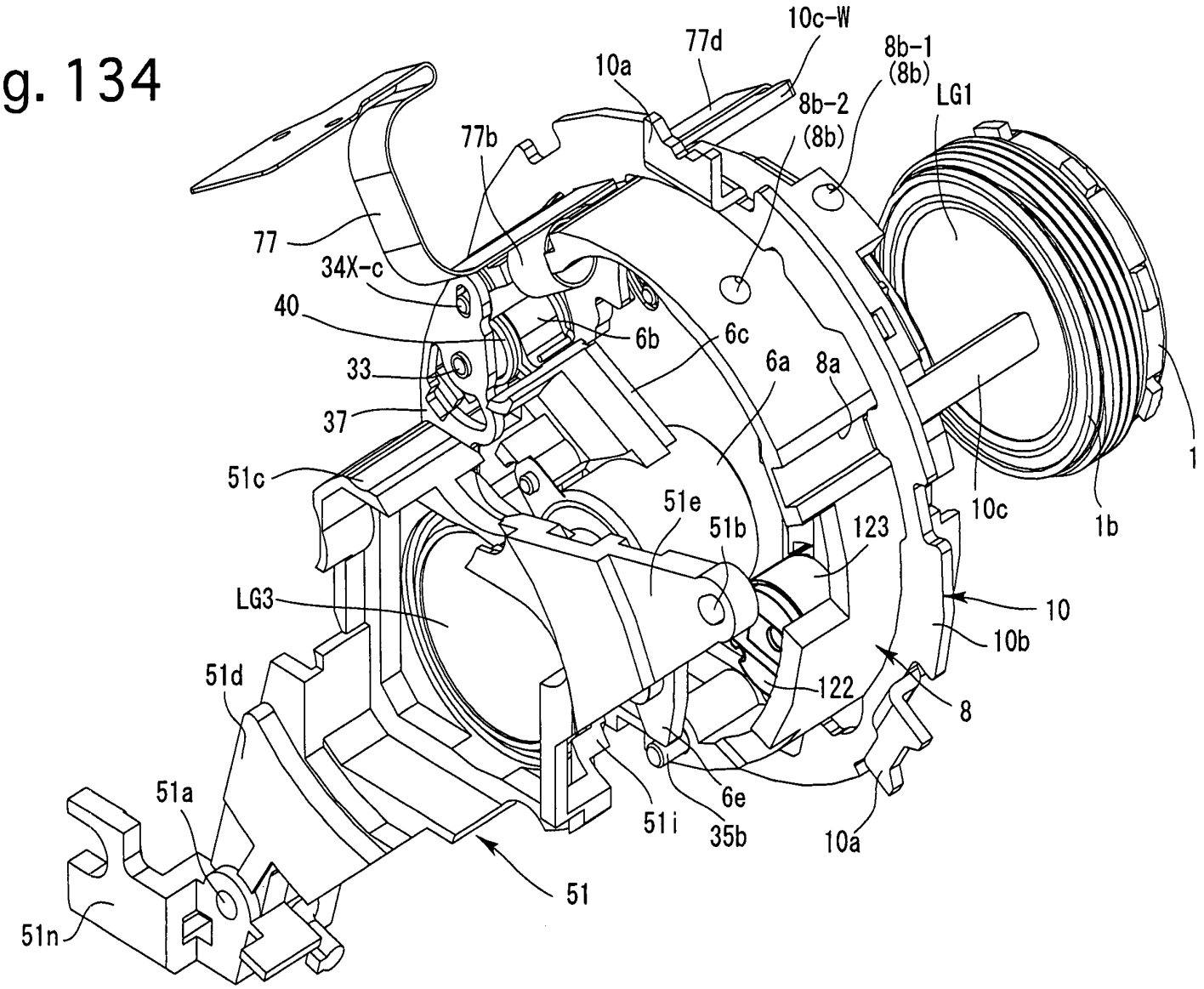

10c-W
77d
10a
8b-1
(8b)
8b-2
(8b)
LG1
77b
77
34X-c
40
6b
6c
6a
8a
33
37
51c
51e
51b
123
1
10c
1b
LG3
10
10b
51d
122
8
51a
6e
51i
35b
10a
51
51n

Fig. 135

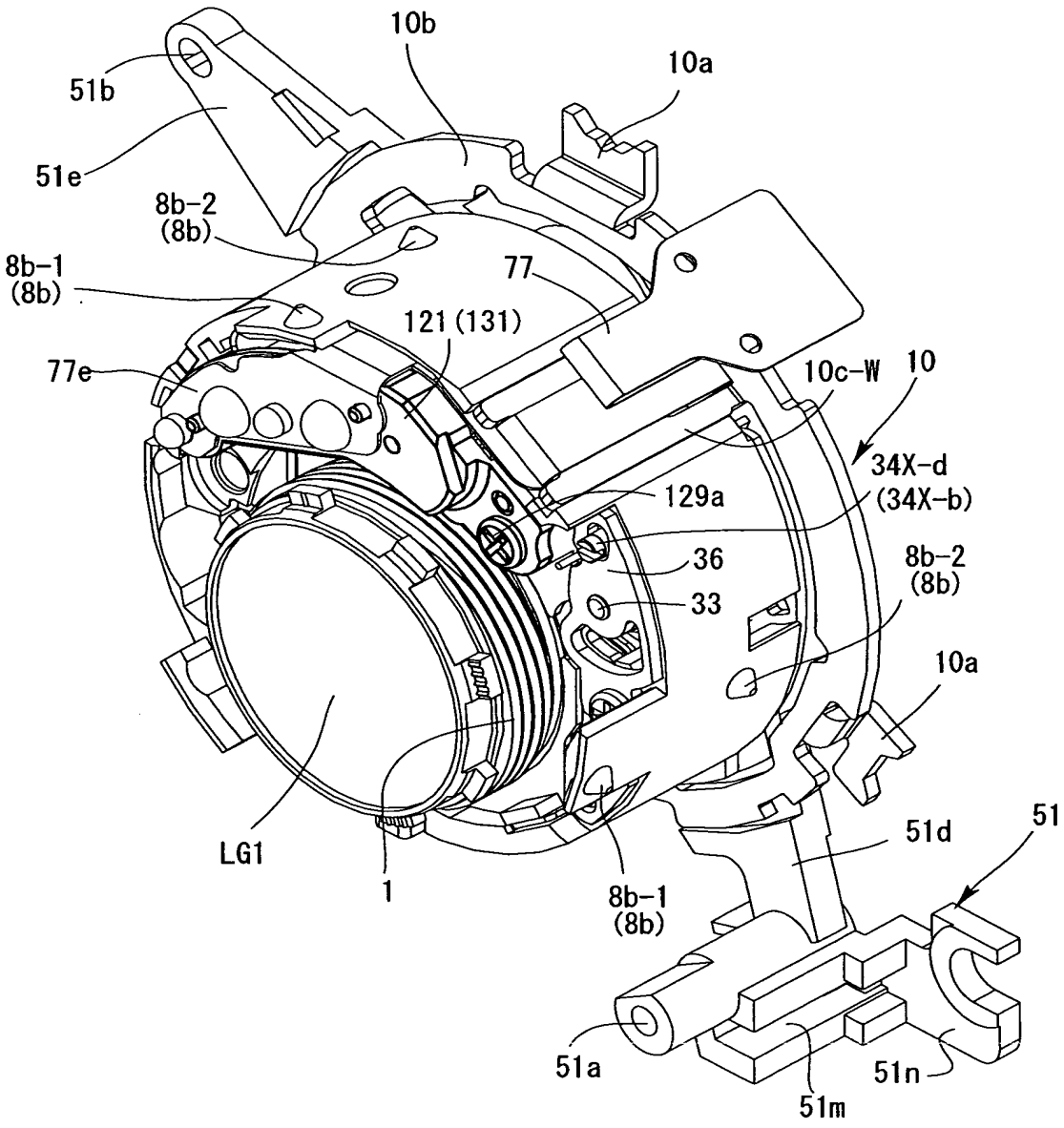

10b
10a
51b
51e
8b-2
(8b)
8b-1
(8b)
77
121 (131)
77e
10c-W
10
34X-d
(34X-b)
129a
36
33
8b-2
(8b)
10a
51
51d
LG1
1
8b-1
(8b)
51a
51n
51m

Fig. 136

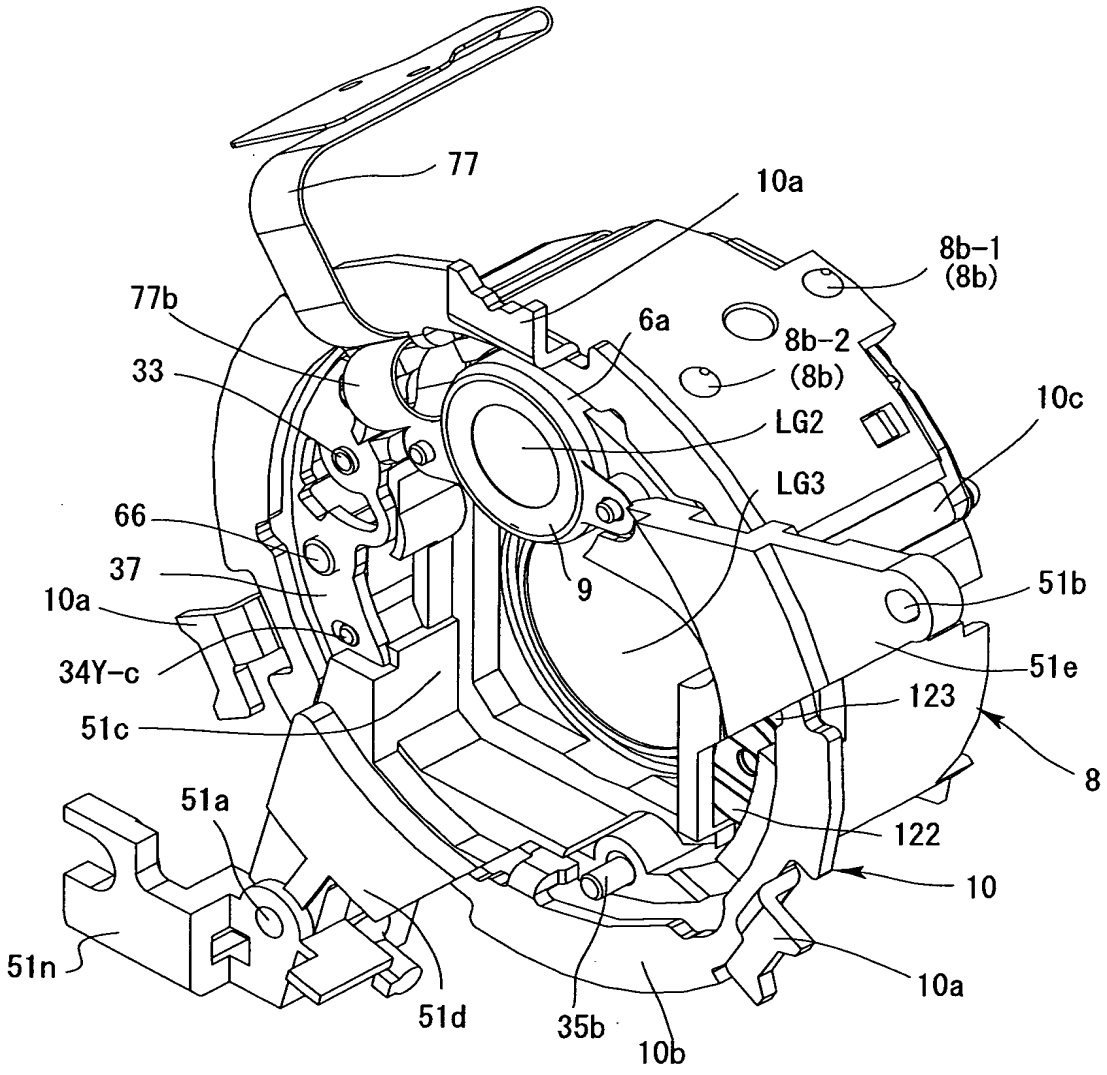

77
10a
8b-1
(8b)
77b
6a
8b-2
(8b)
33
LG2
10c
LG3
66
37
9
51b
10a
34Y-c
51e
123
51c
8
51a
122
10
51n
10a
51d
35b
10b

Fig. 137

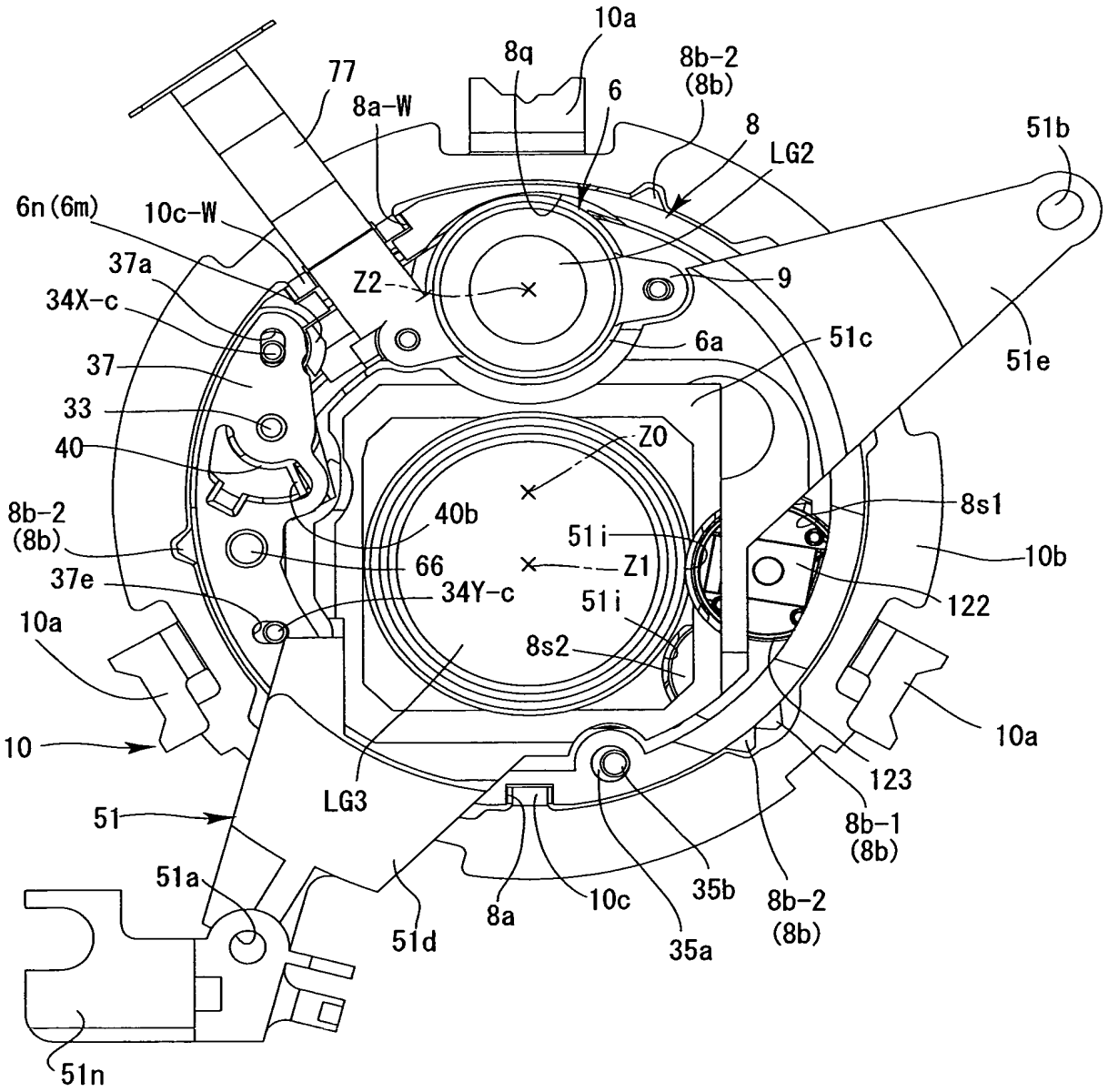

10a
8q
77
8b-2
(8b)
8a-W
6
8
LG2
51b
6n(6m)
10c-W
37a
Z2
9
34X-c
6a
51c
51e
37
33
40
Z0
8s1
8b-2
(8b)
40b
51i
10b
66
Z1
37e
34Y-c
51i
122
10a
8s2
10
10a
123
LG3
51
8b-1
(8b)
51a
35b
8b-2
(8b)
8a
10c
51d
35a
51n

Fig. 138

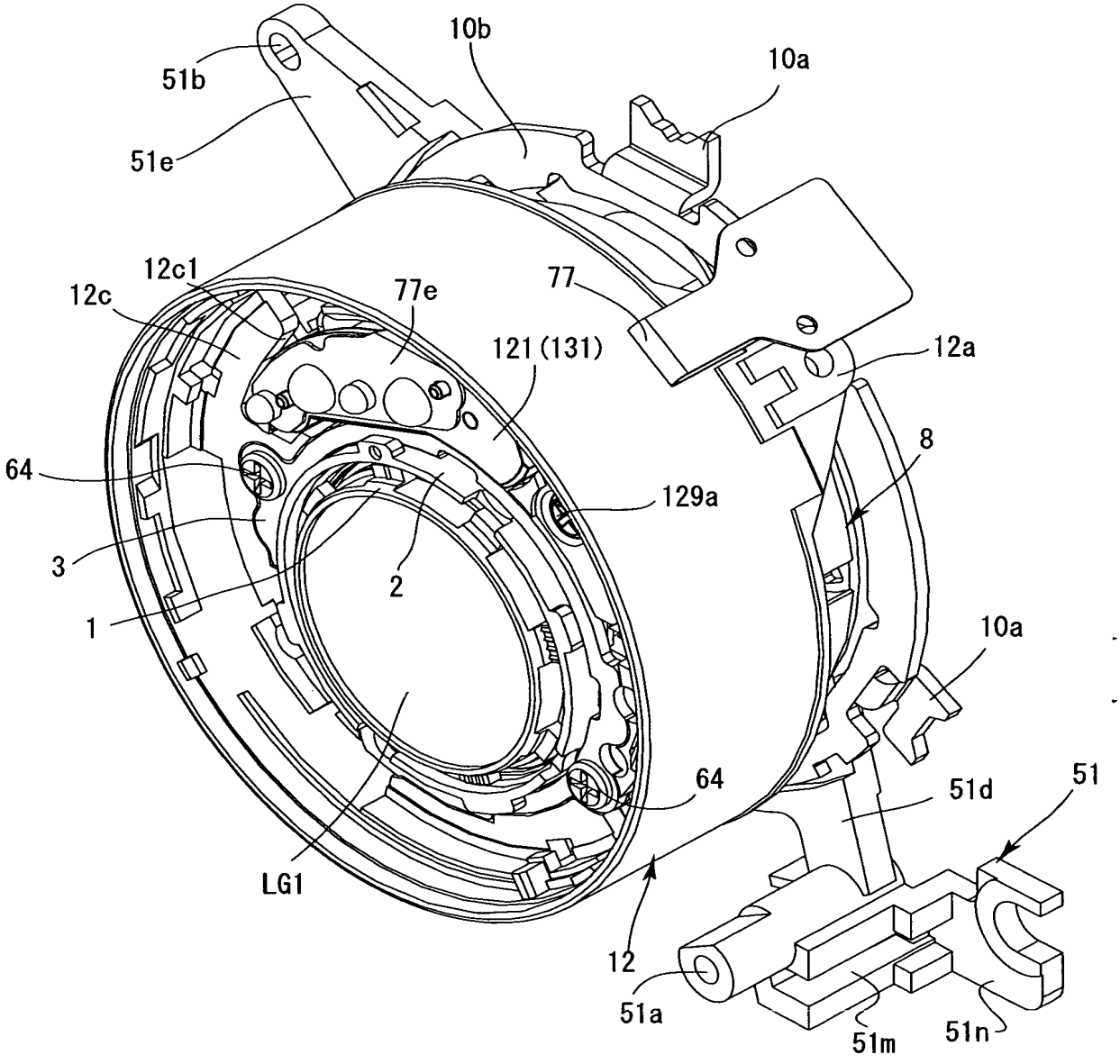

51b
10b
10a
51e
12c1
12c
77e
77
121 (131)
12a
64
8
129a
3
2
1
10a
64
51d
51
LG1
12
51a
51m
51n

Fig. 139

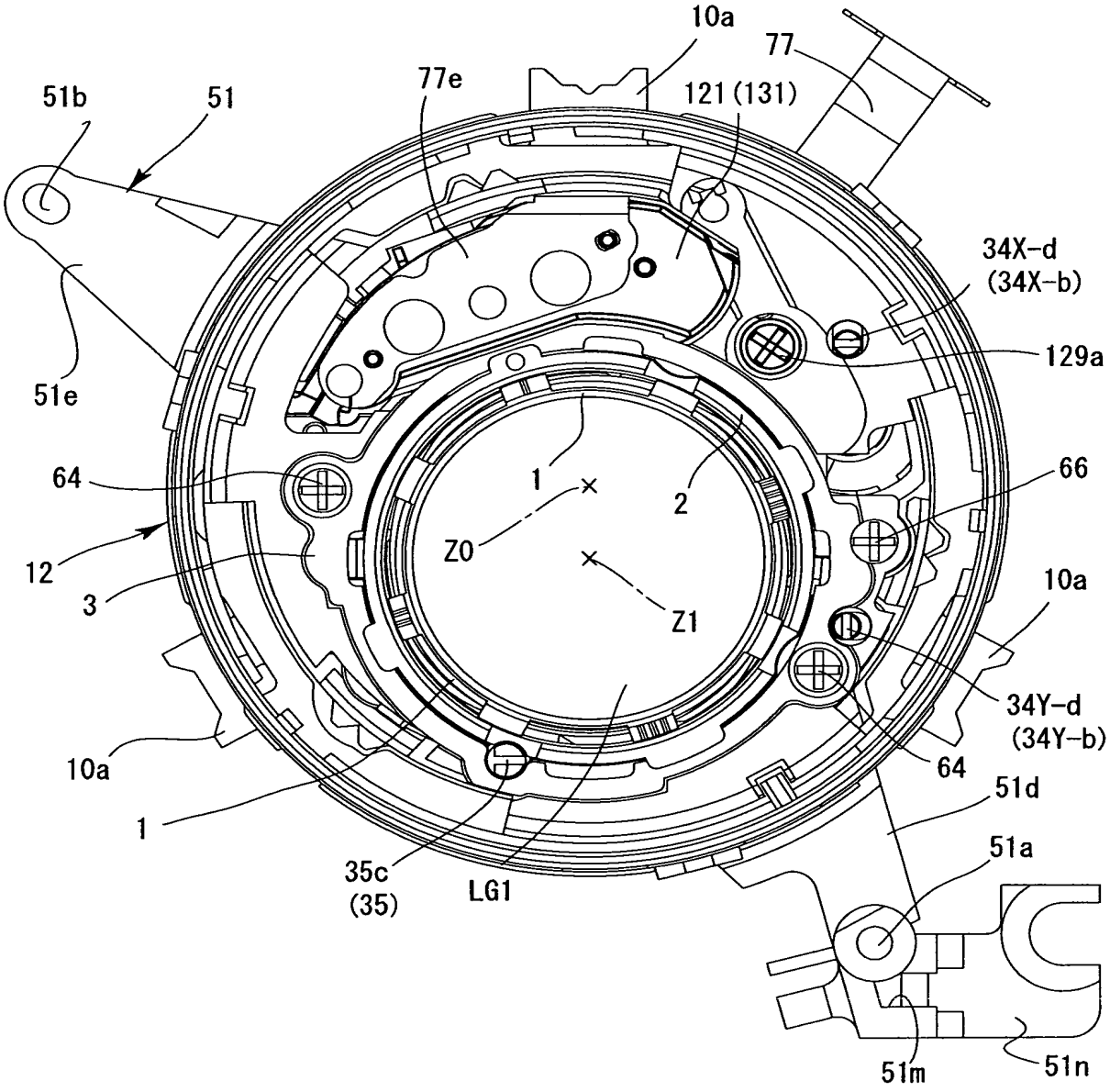
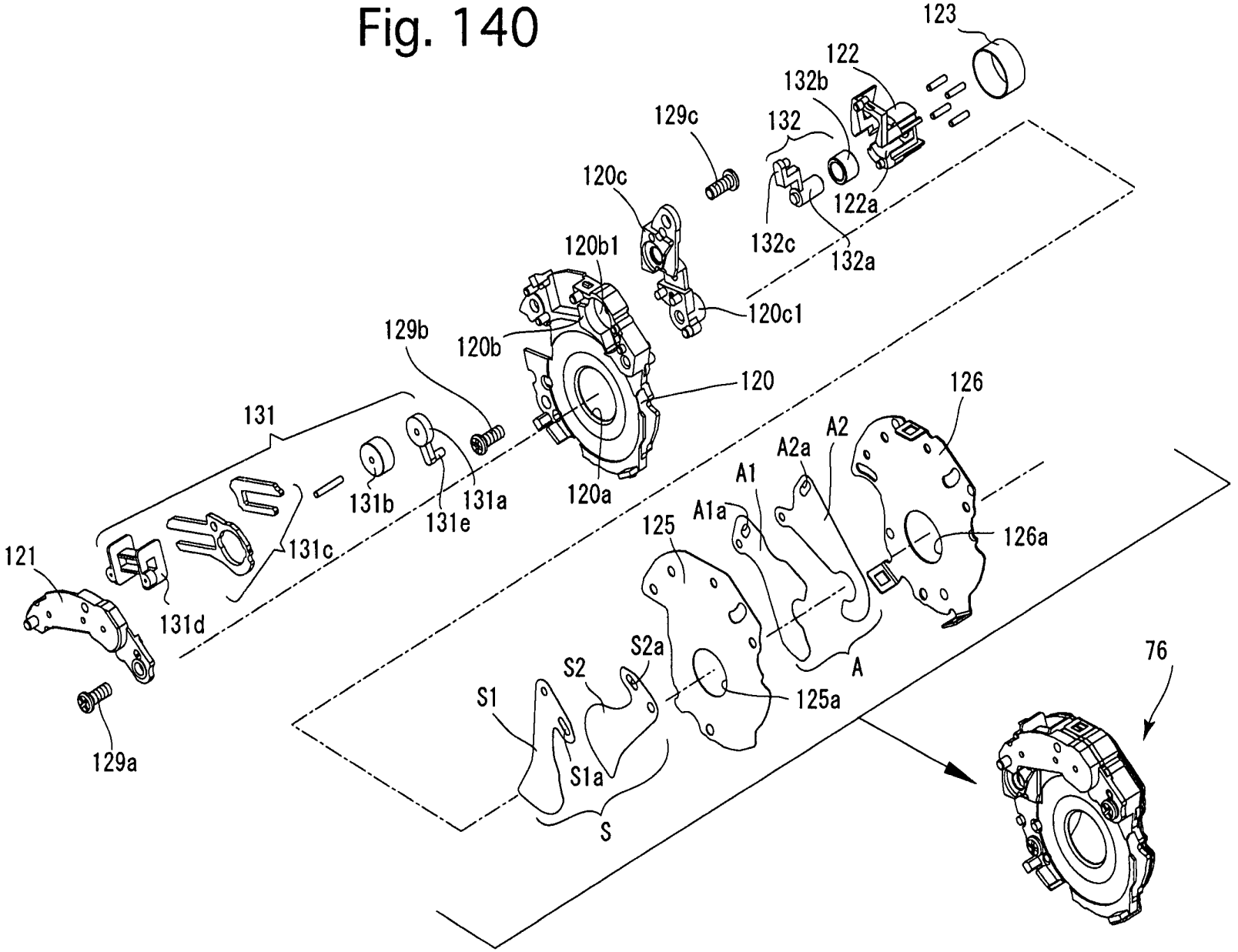

10a
77
77e
51b
51
121 (131)
34X-d
(34X-b)
129a
51e
64
1
2
66
12
Z0
3
Z1
10a
34Y-d
(34Y-b)
10a
64
51d
1
51a
35c
(35)
LG1
51m
51n

Fig. 140


123
122
132b
132
129c
120c
122a
132c
132a
120b1
120c1
129b
120b
120
126
131
A2
A2a
A1
A1a
125
126a
131b
131a
131e
120a
131c
121
131d
S2a
S2
S1
125a
A
76
129a
S1a
S

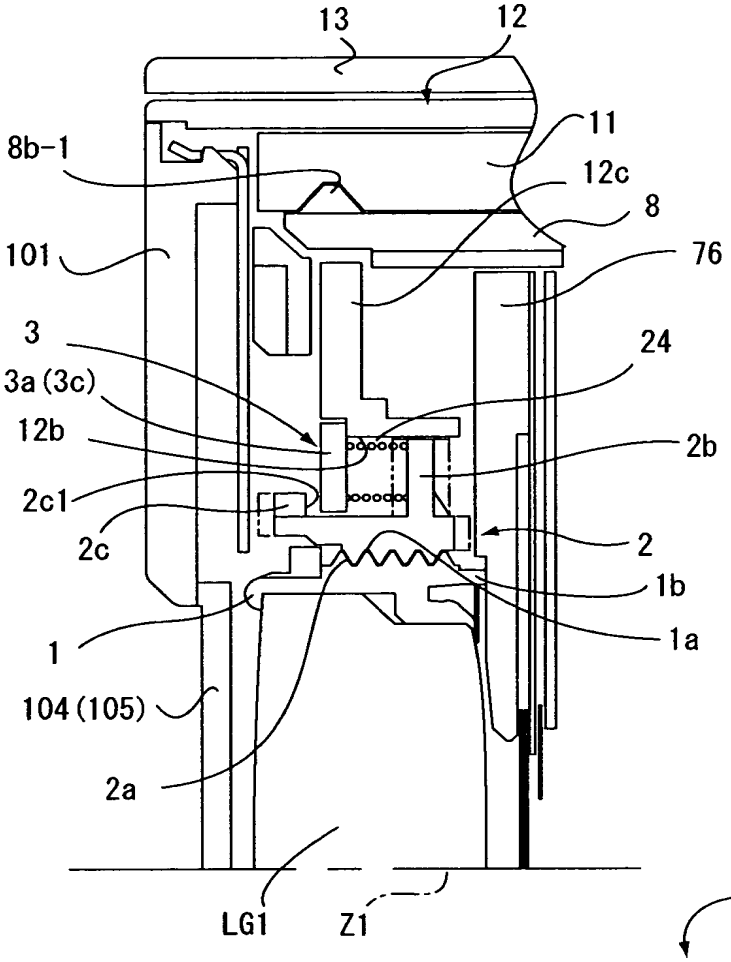


Fig. 142

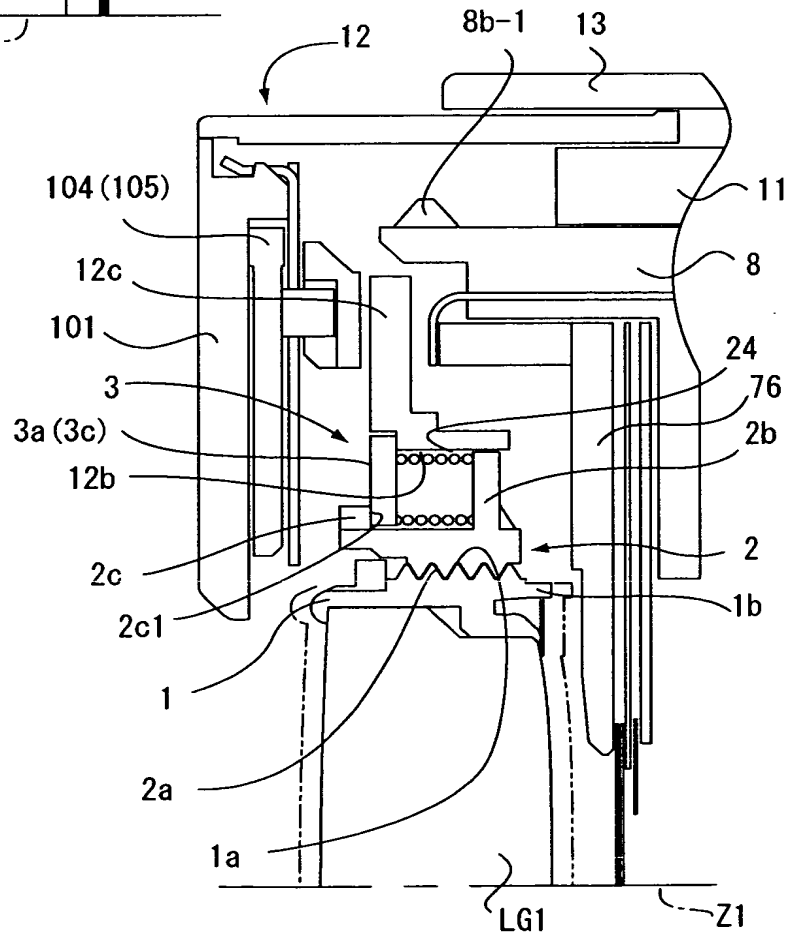


Fig. 141

Fig. 143

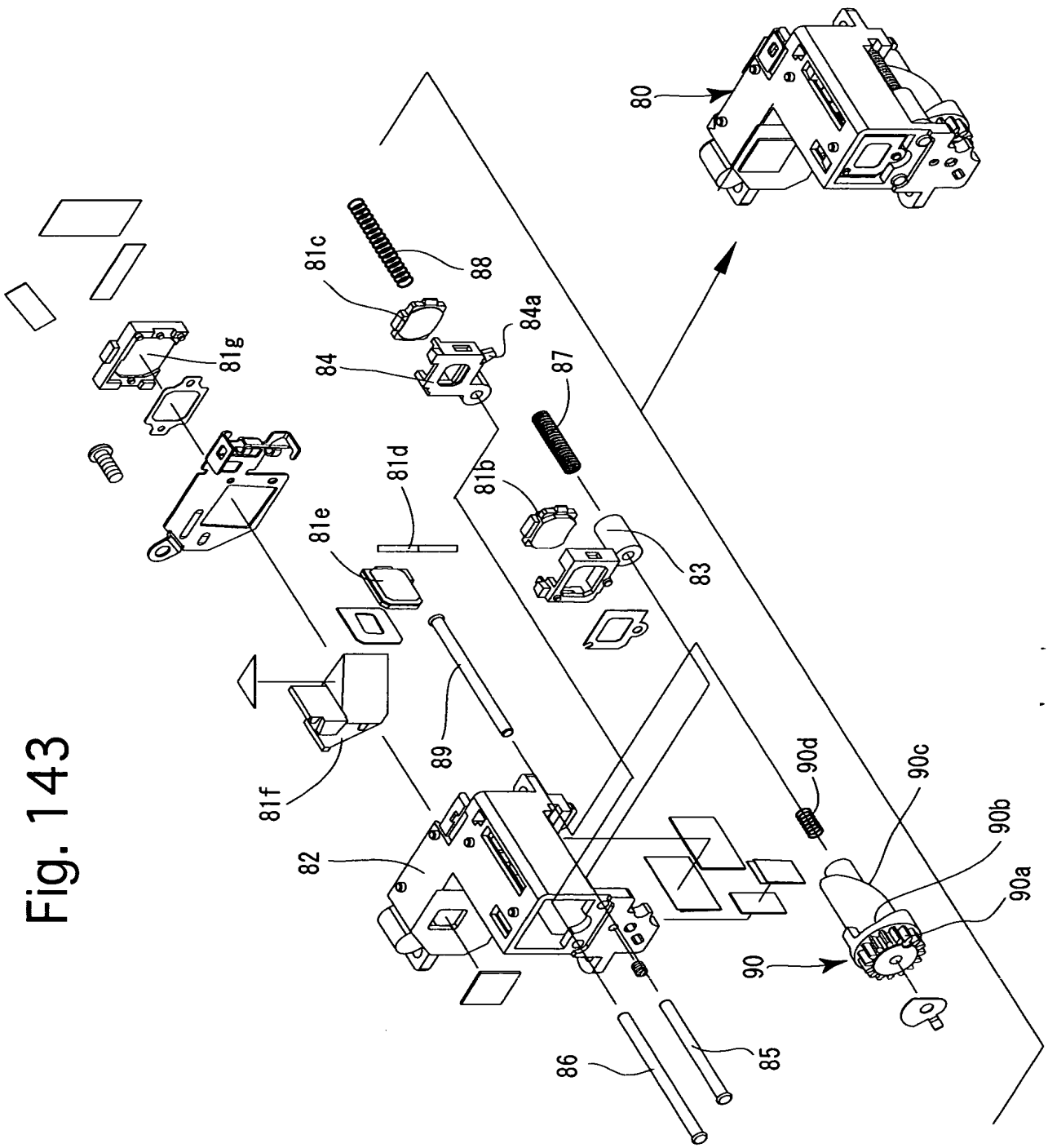

80
81c
88
84a
84
87
81g
81d
81b
81e
83
81f
89
90d
90c
90b
82
90a
90
86
85

Fig. 144

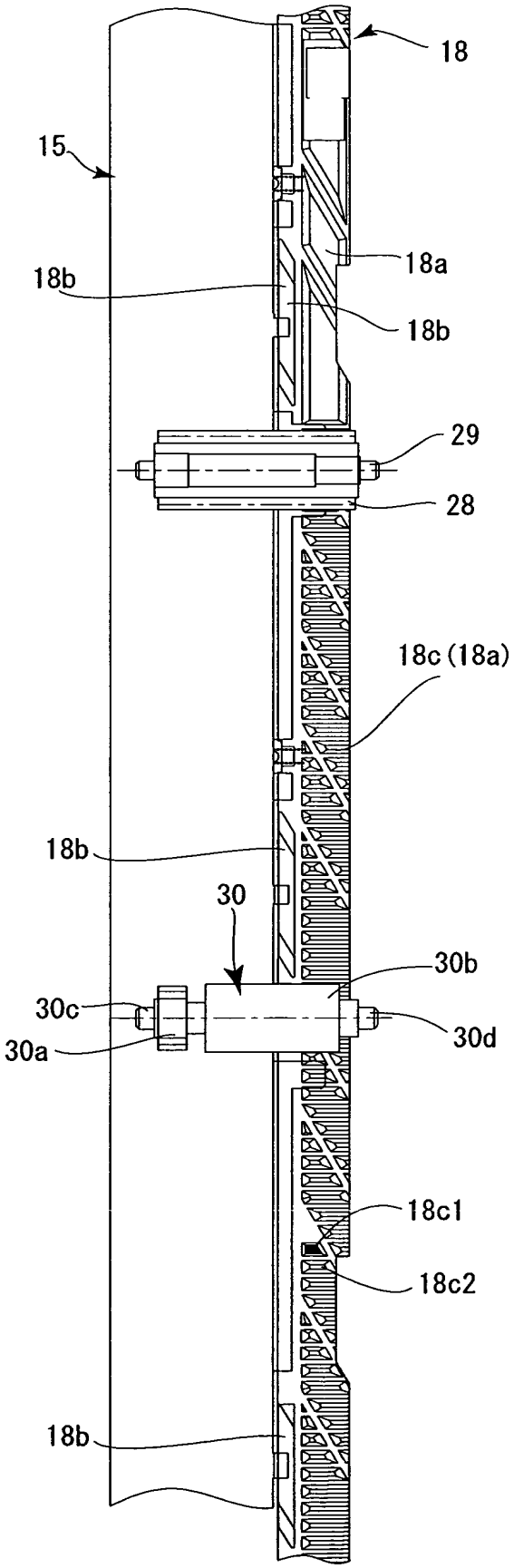


Fig. 145

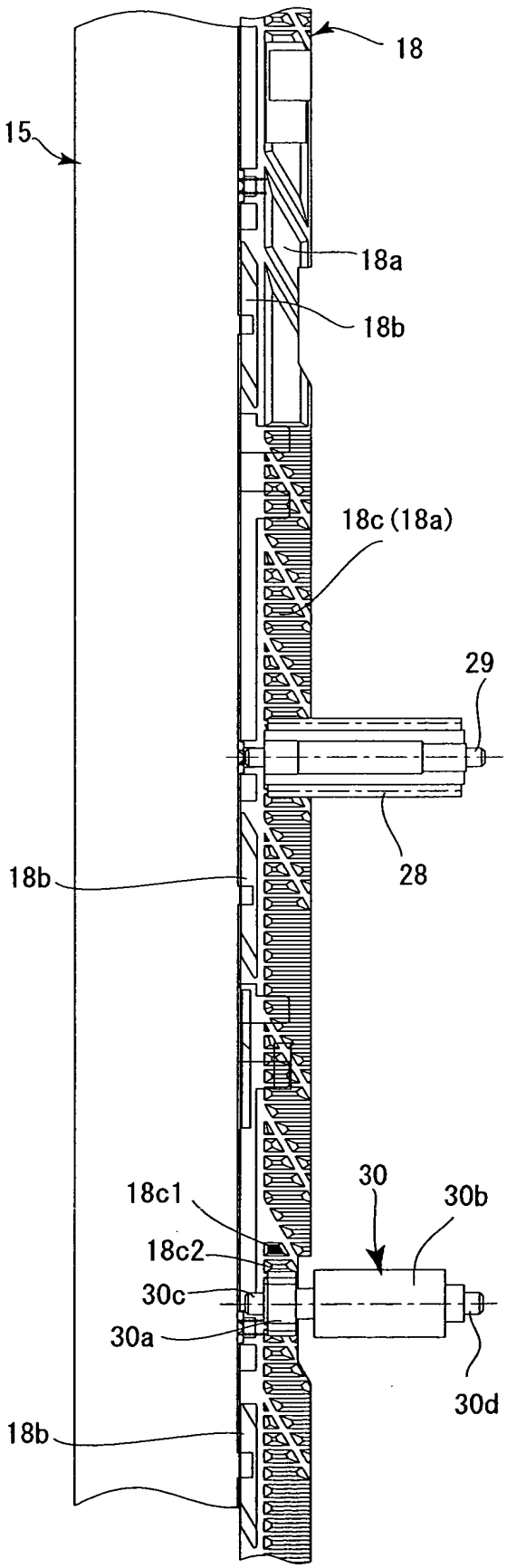


Fig. 146

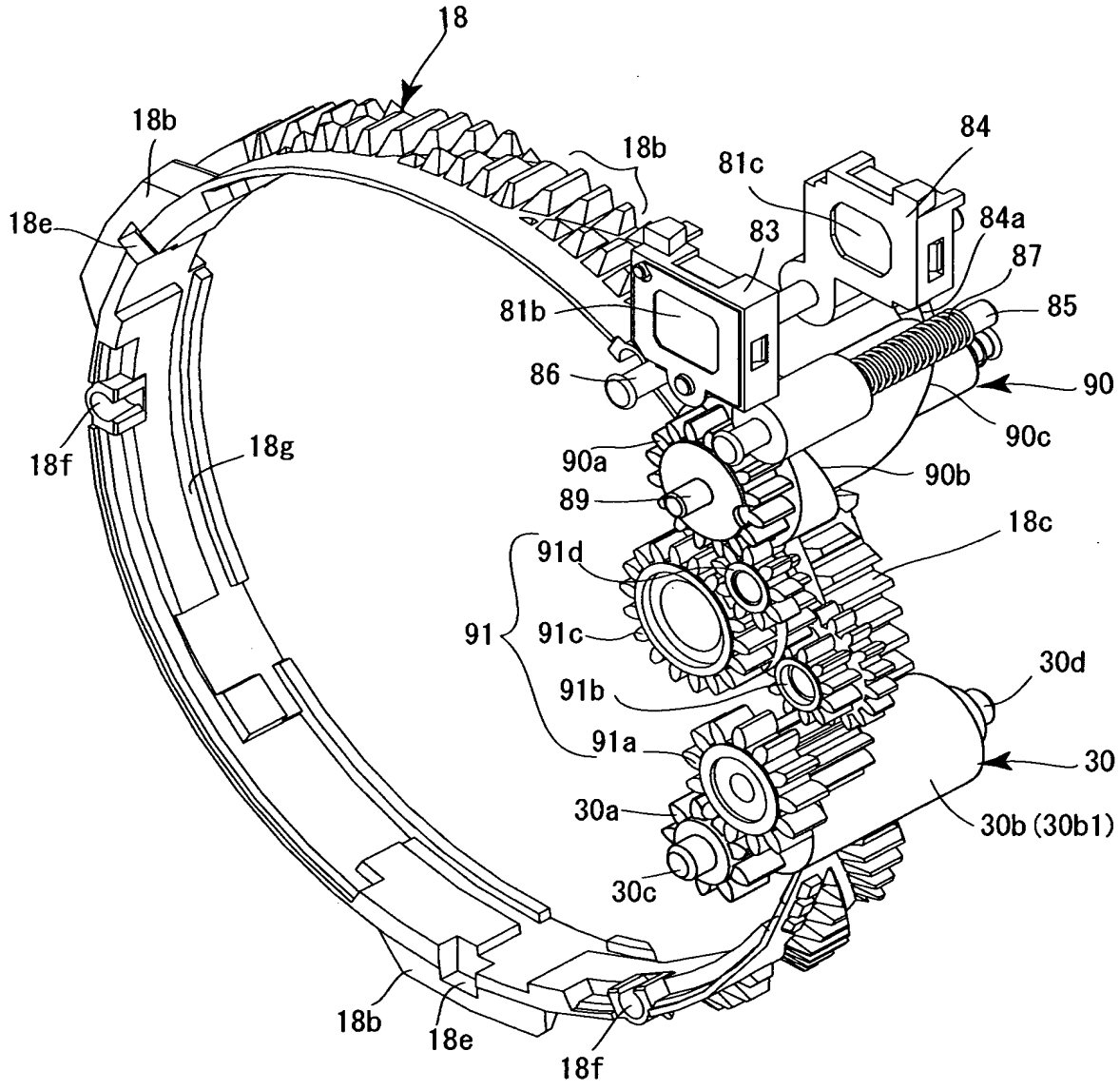

18
18b
18b
84
81c
18e
84a
83
87
81b
85
86
90
90c
18f
18g
90a
90b
89
18c
91d
91
91c
30d
91b
91a
30
30a
30b (30b1)
30c
18b
18e
18f

Fig. 147

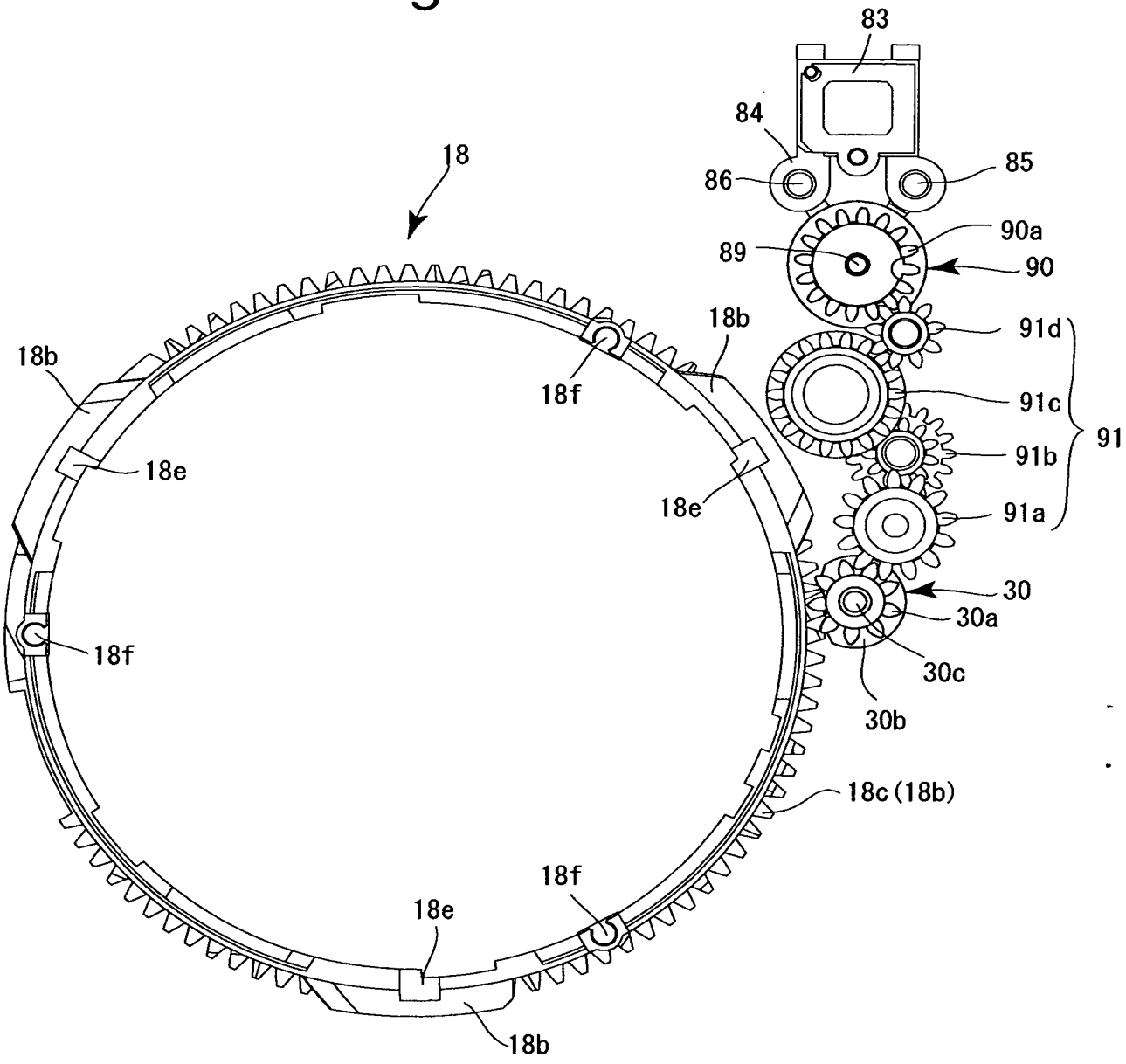

83
84
85
86
18
90a
89
90
18b
91d
18b
18f
91c
91
18e
91b
18e
91a
30
30a
18f
30c
30b
18c (18b)
18f
18e
18b

Fig. 148

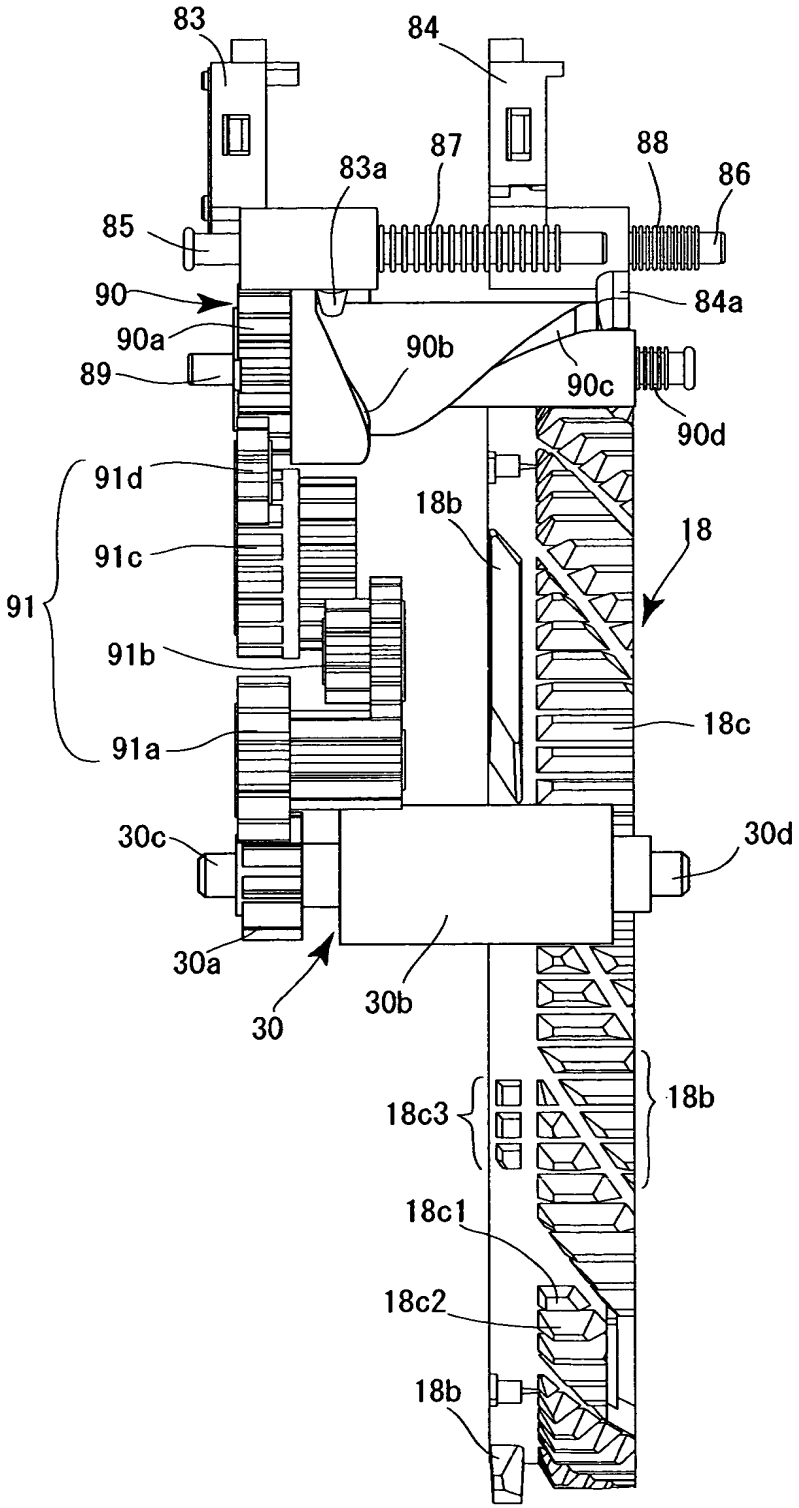

83
84
87
88
86
83a
85
90
84a
90a
90b
89
90c
90d
91d
18b
18
91c
91
91b
18c
91a
30c
30d
30a
30
30b
18c3
18b
18c1
18c2
18b

Fig. 149

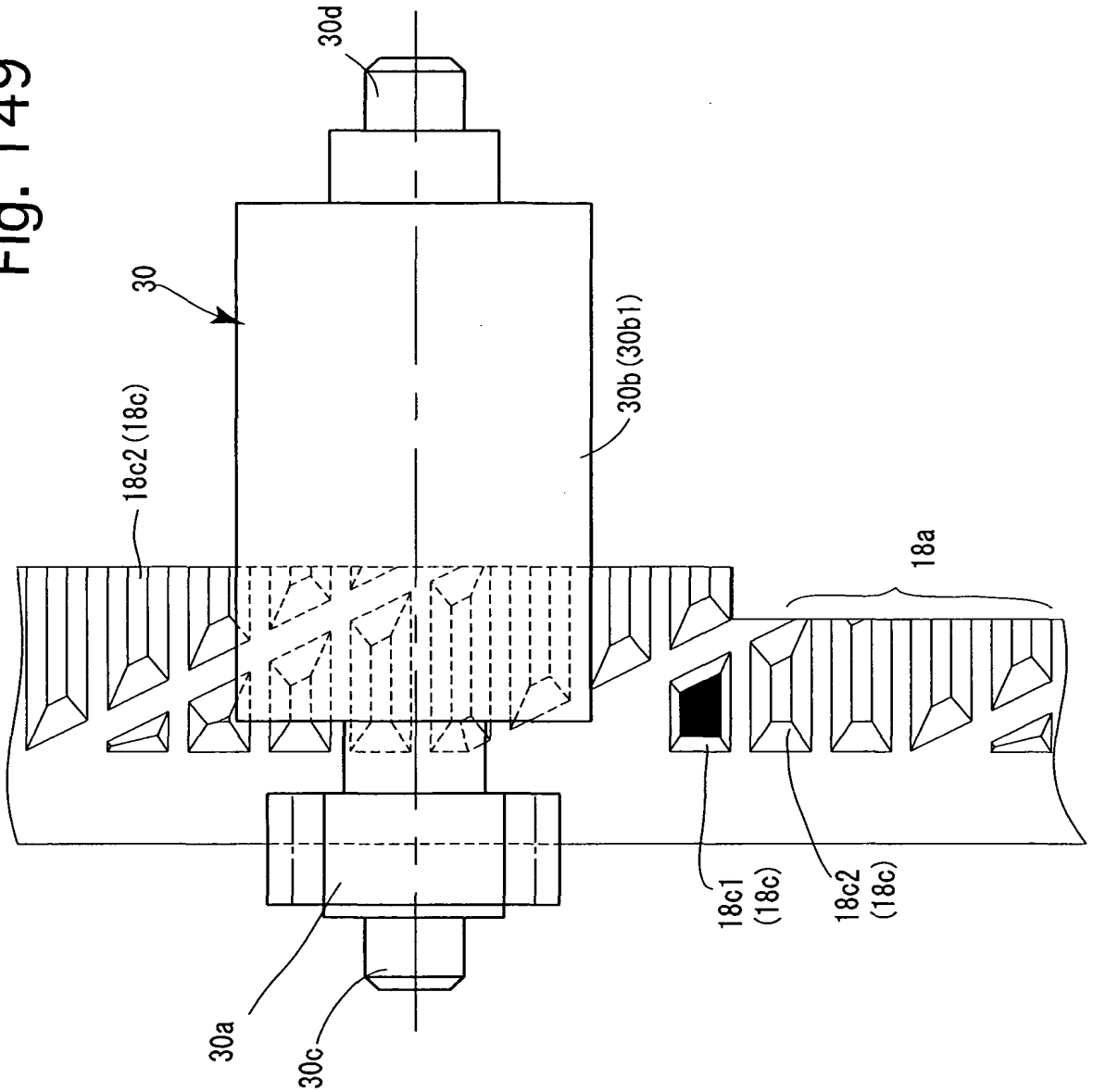


Fig. 150

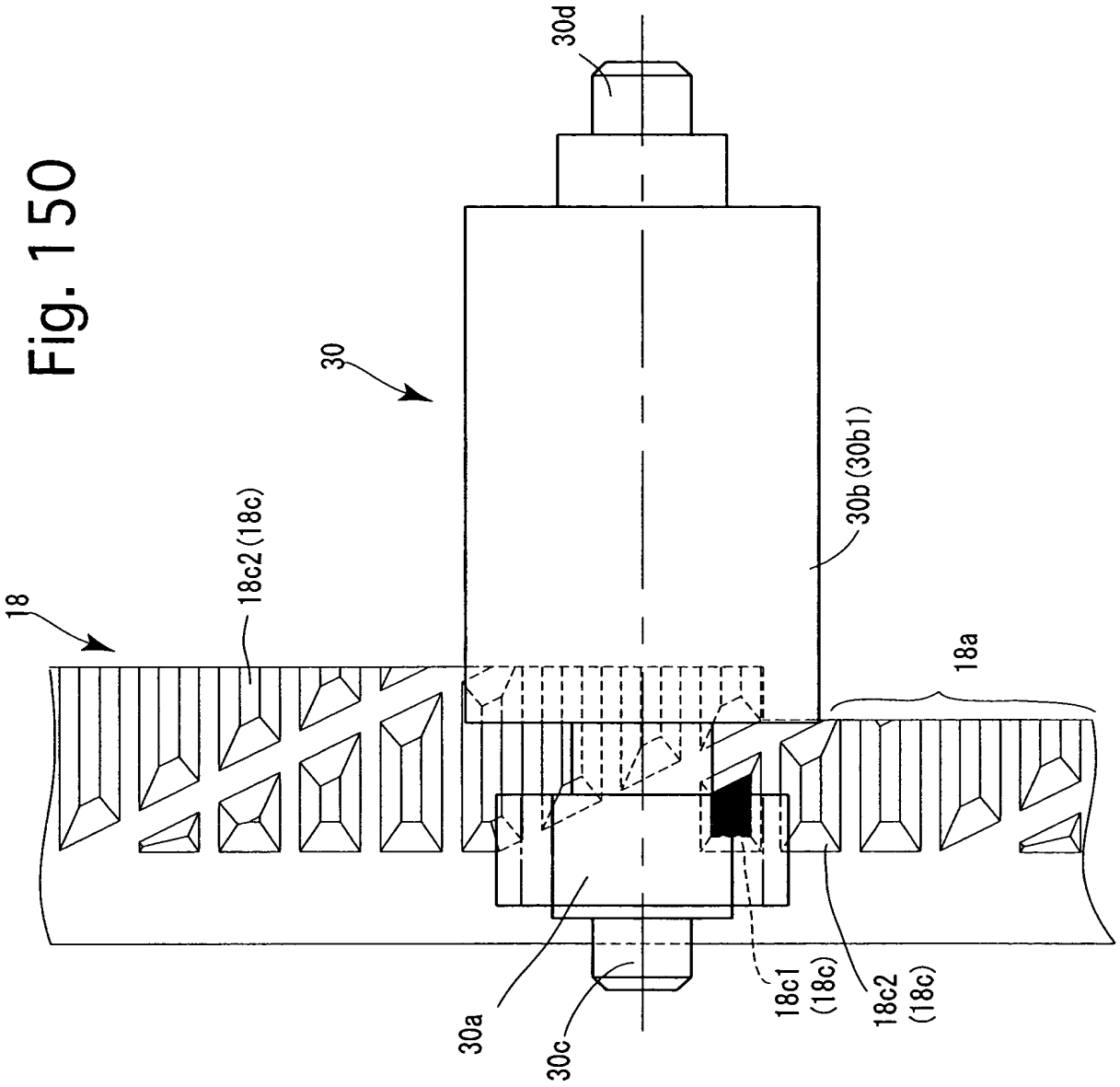


Fig. 151

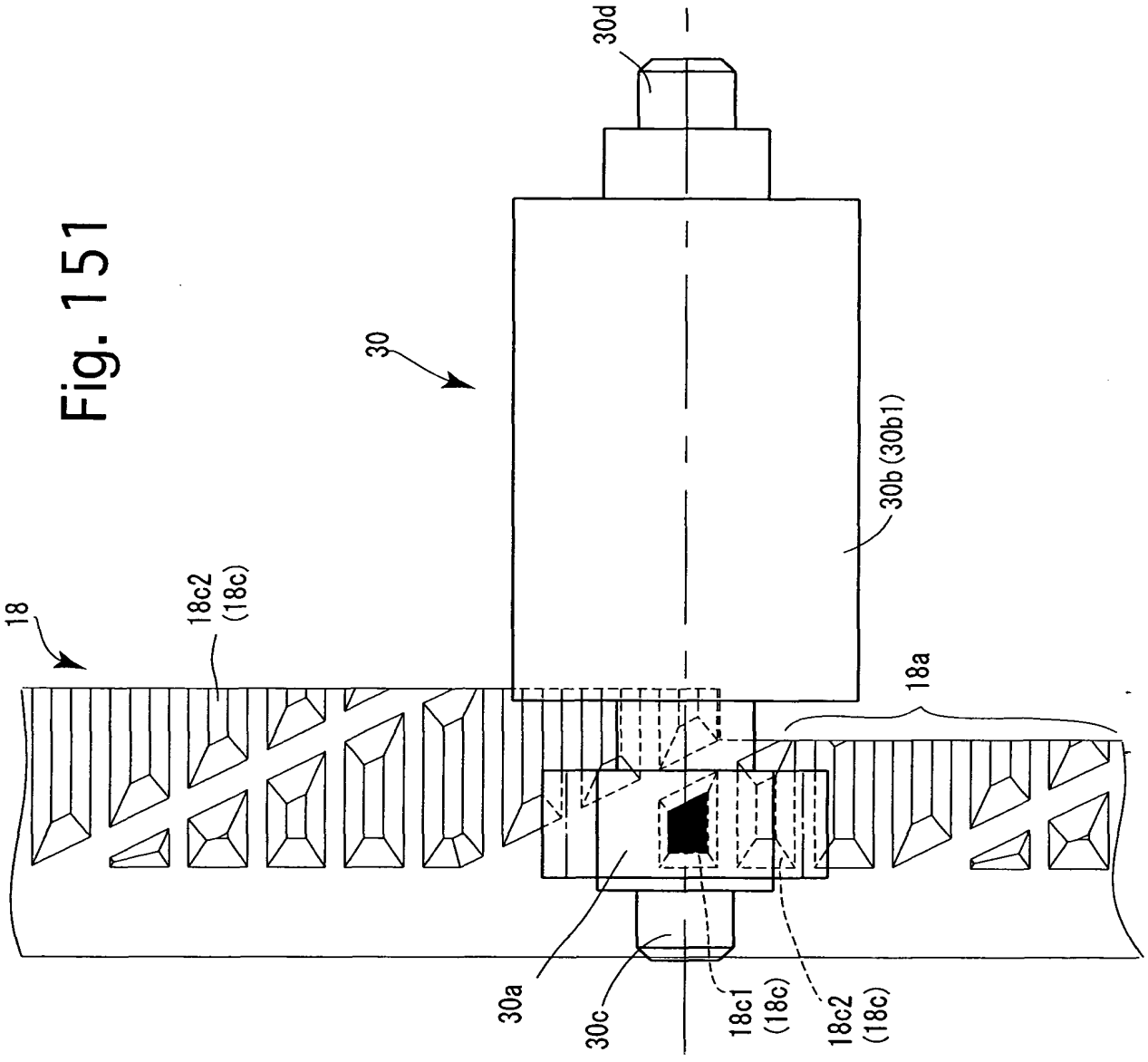


Fig. 152

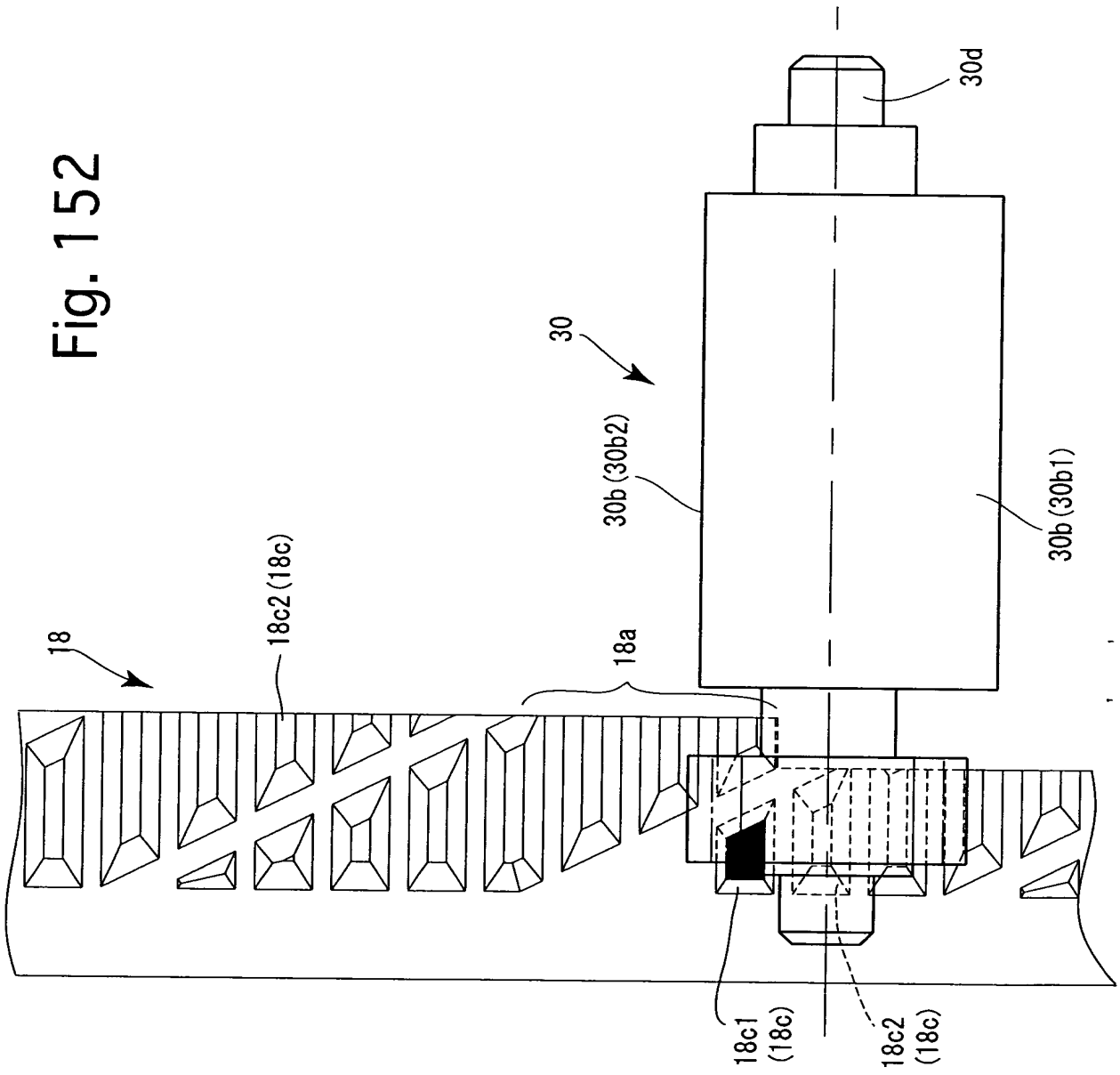


Fig. 153

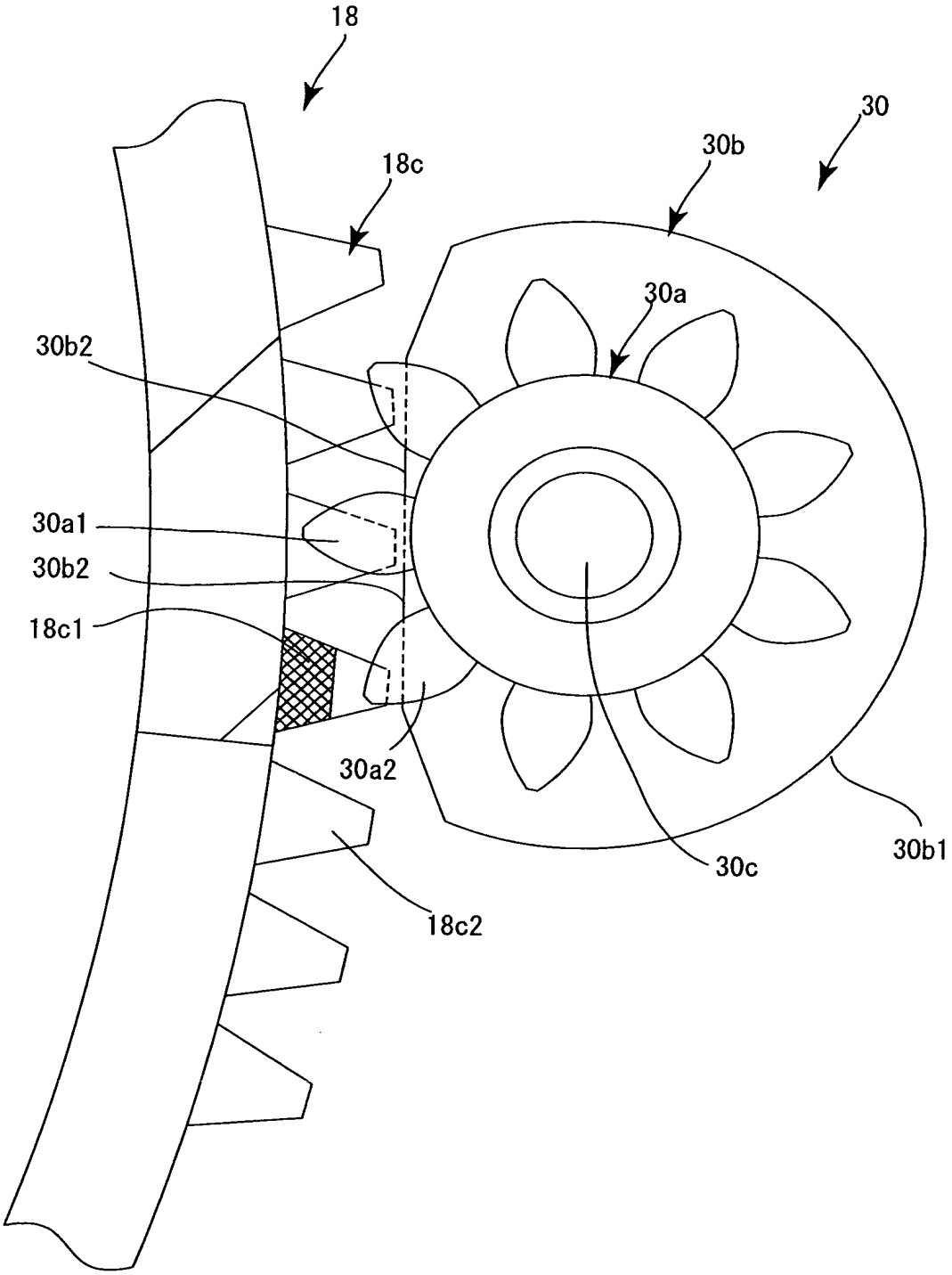


Fig. 154

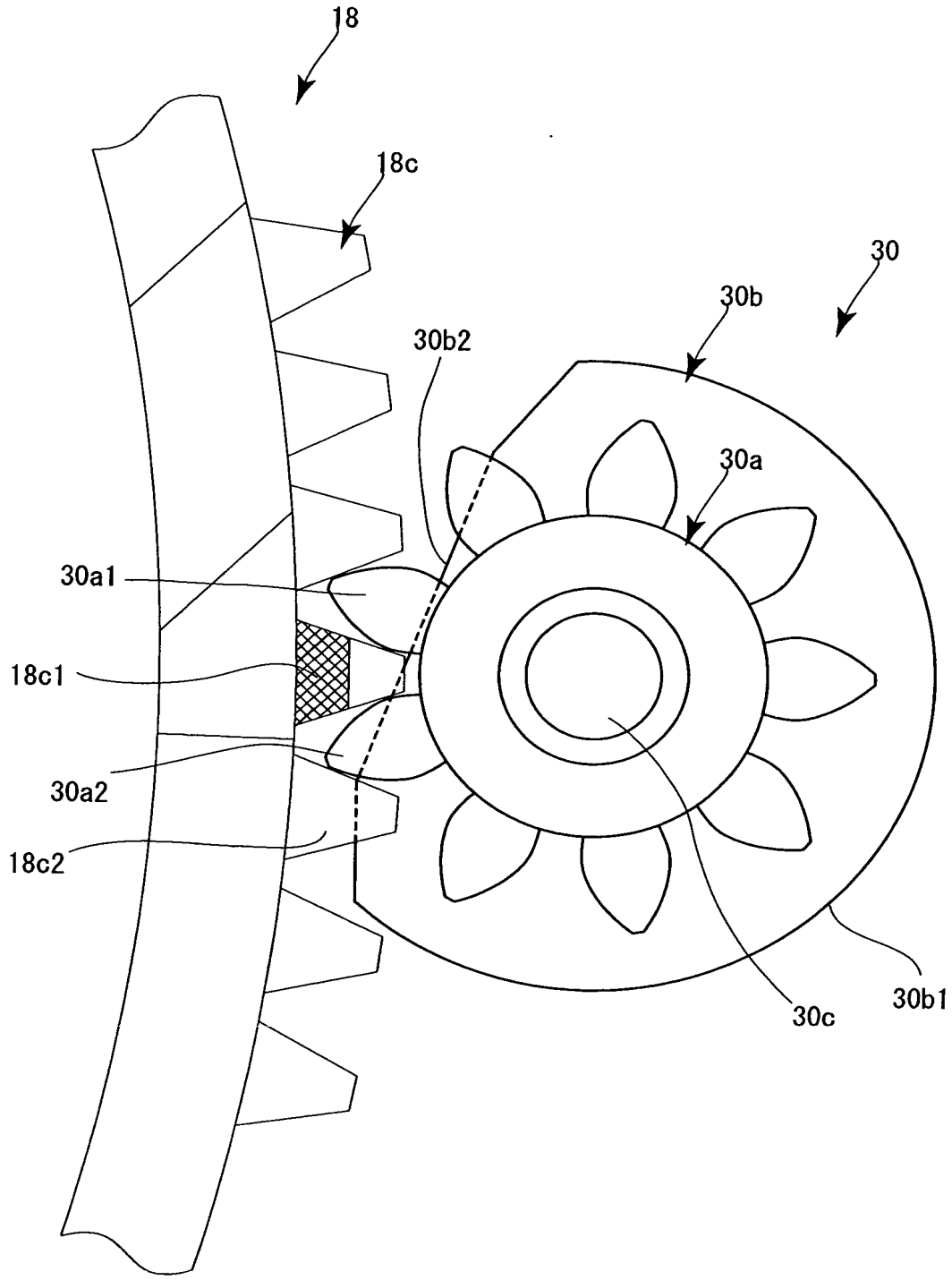


Fig. 155

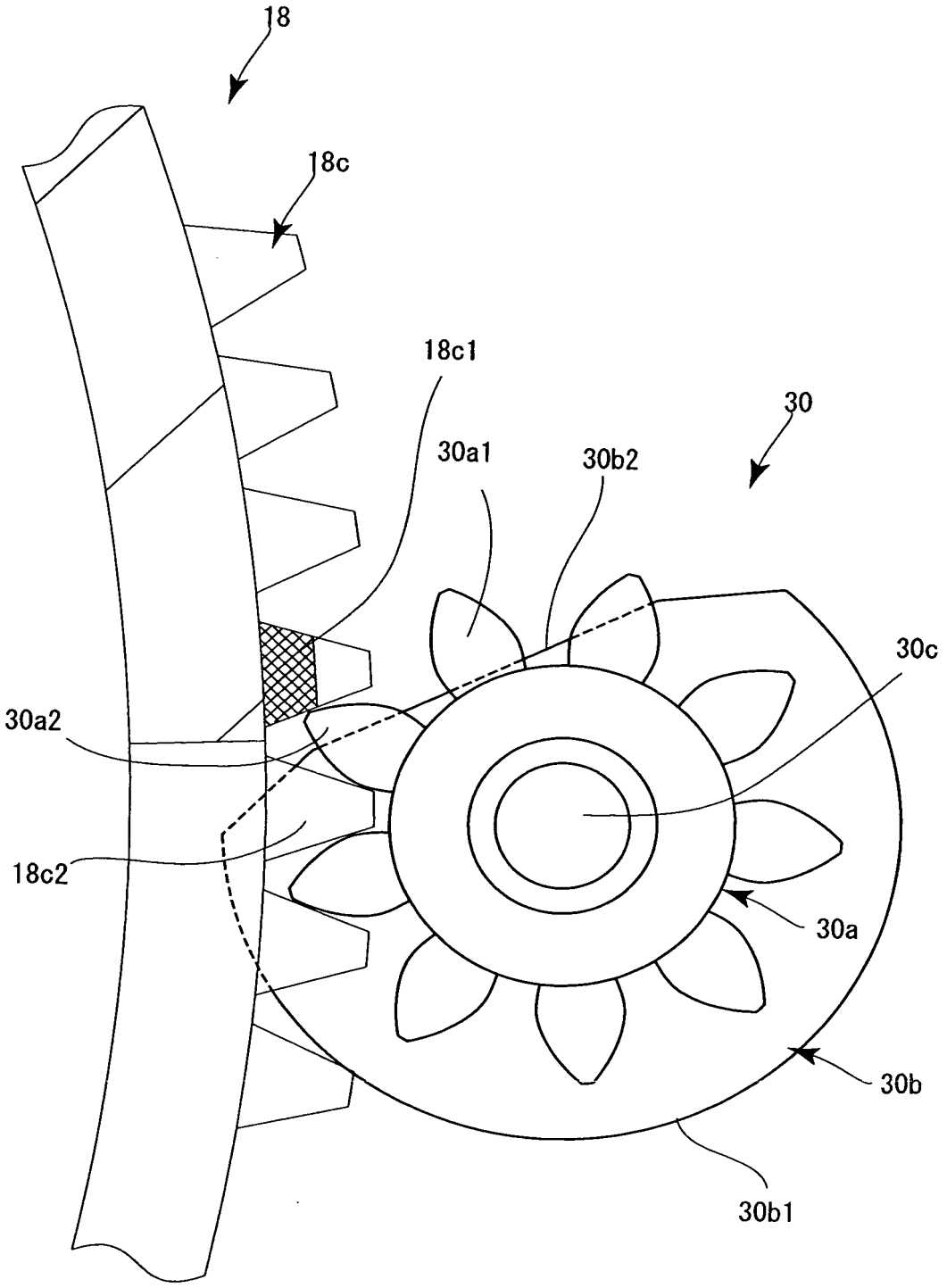


Fig. 156

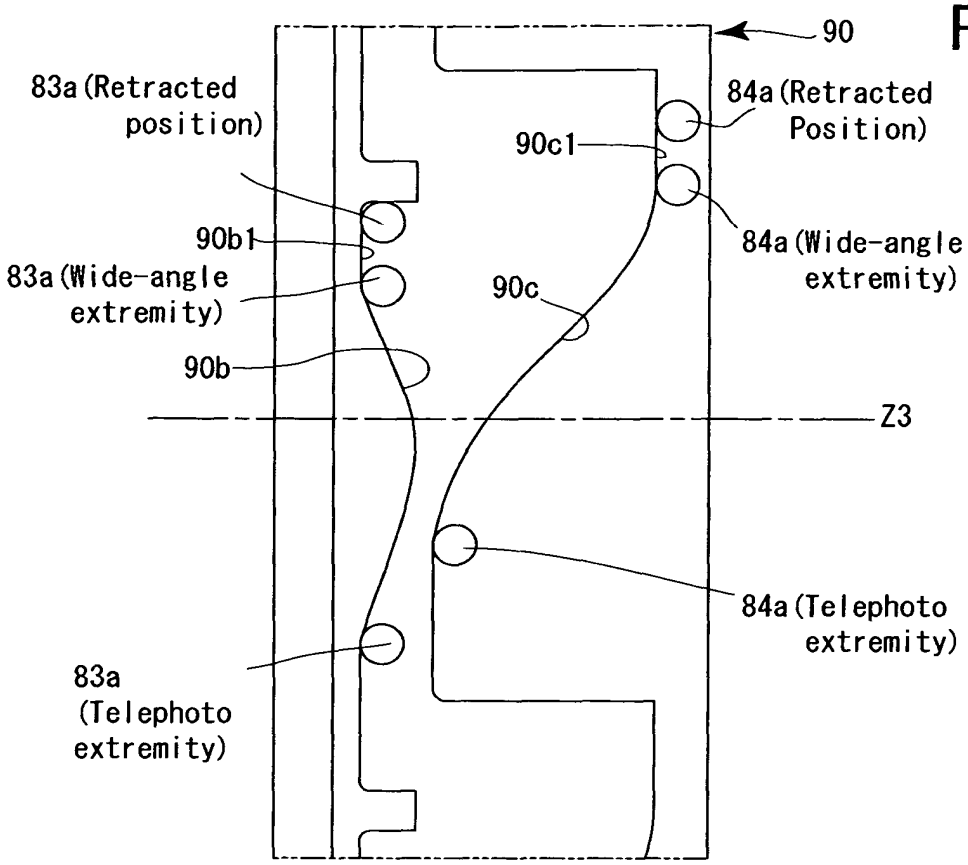
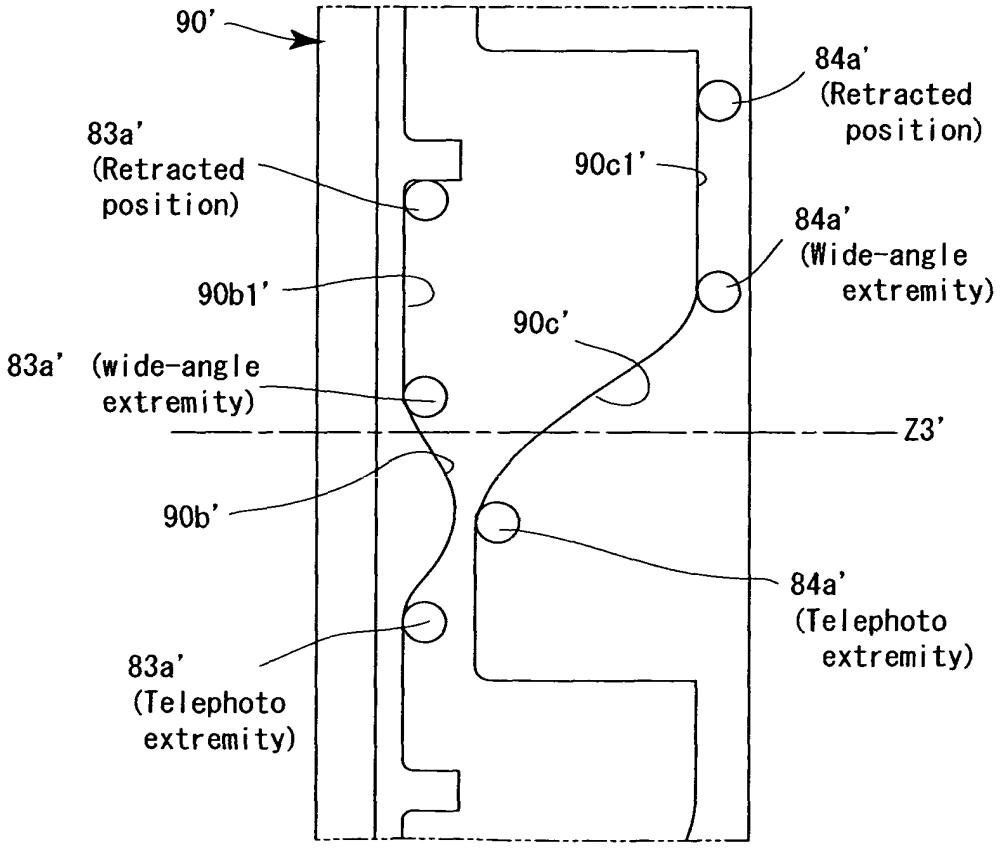



Fig. 157